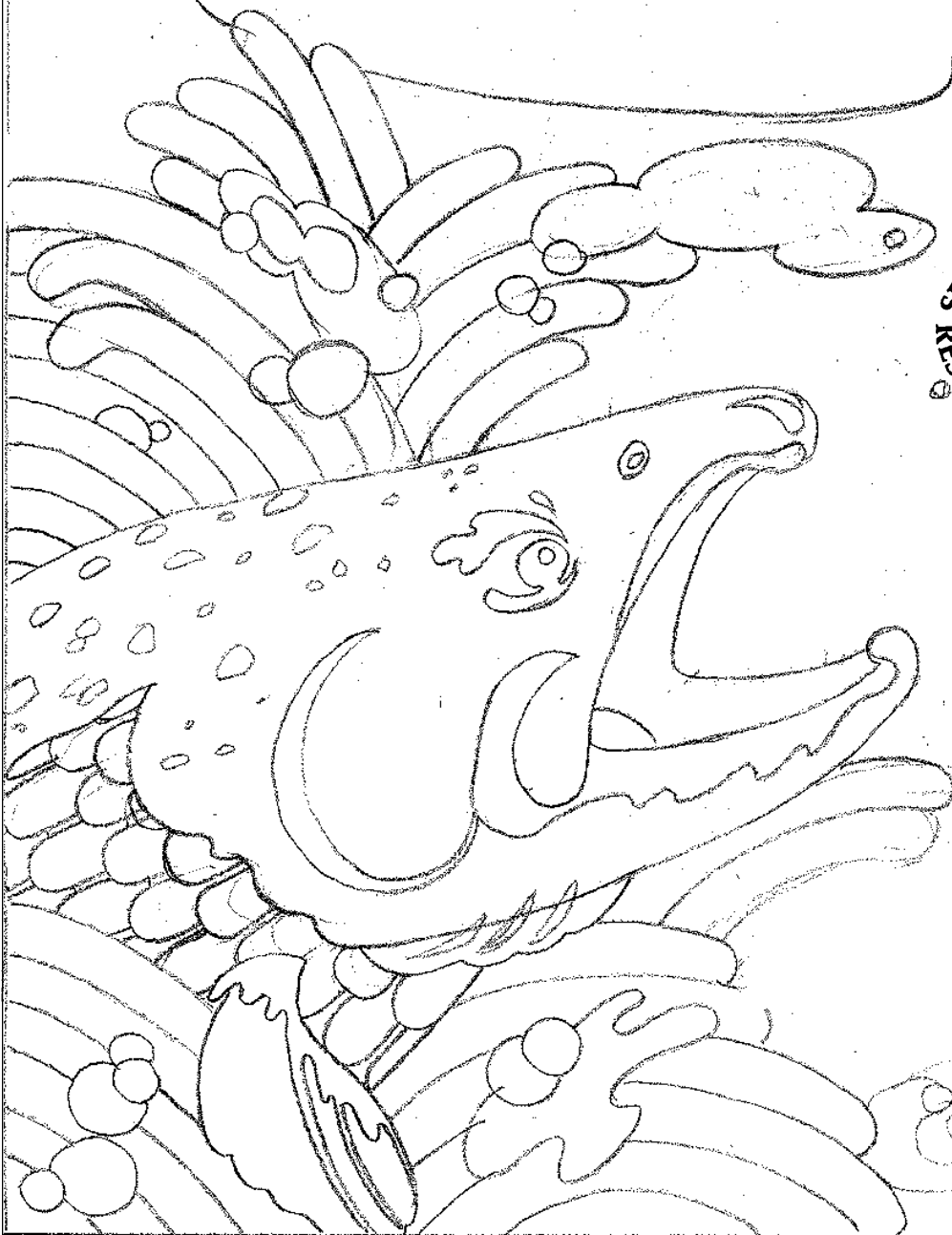
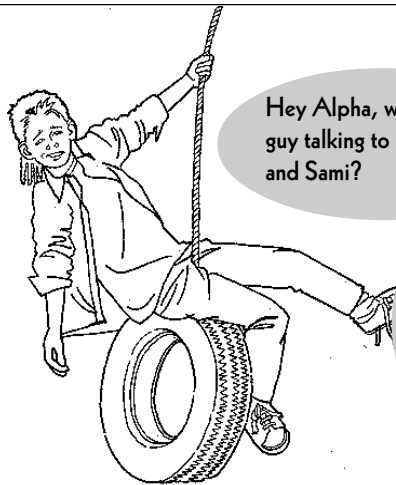




# AQUATIC EDUCATION

*Student handbook*





Hey Alpha, who's the old  
guy talking to Billy  
and Sami?

Billy's grandfather...  
He took Eddie,  
Clay and me fishing  
last summer.

Yeah...it was great.  
What's with all the  
junk he's got over  
there?



He's going to  
do part of  
Ms. Filbert's after  
school unit....I'd  
rather go shopping.



Oh, puleeease....



# What is Sport Fishing?



Federal Aid is a tax that anglers and boaters pay to help  
pay for sport fish management and motorboat access  
across the United States.

## ANGLER CHALLENGE



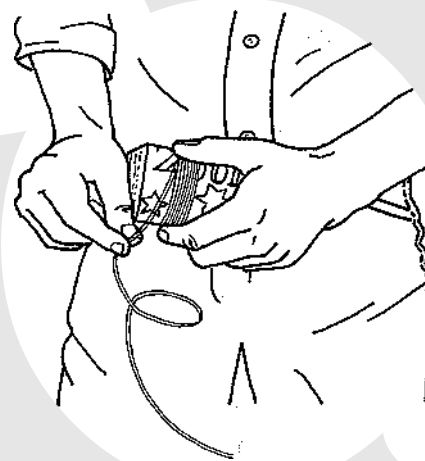
Sure you  
can...let  
me show you.

You can  
fish with  
a popcan?

Tie the monofilament  
to the can's pull tab...

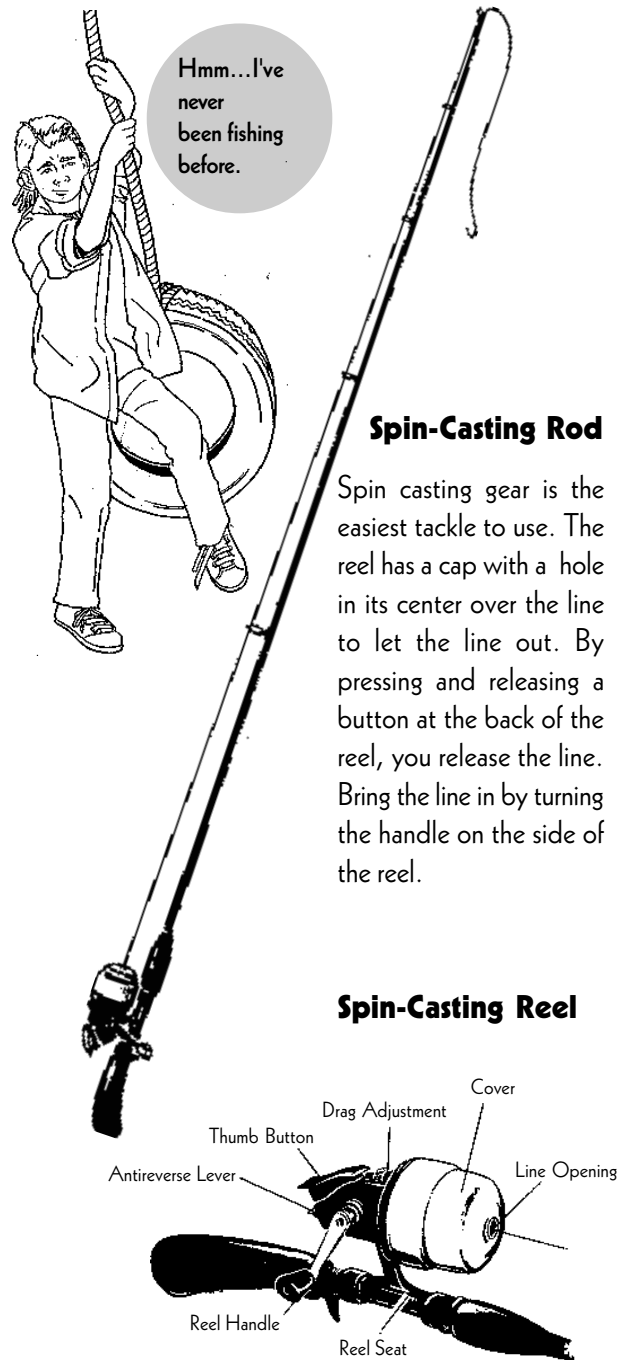
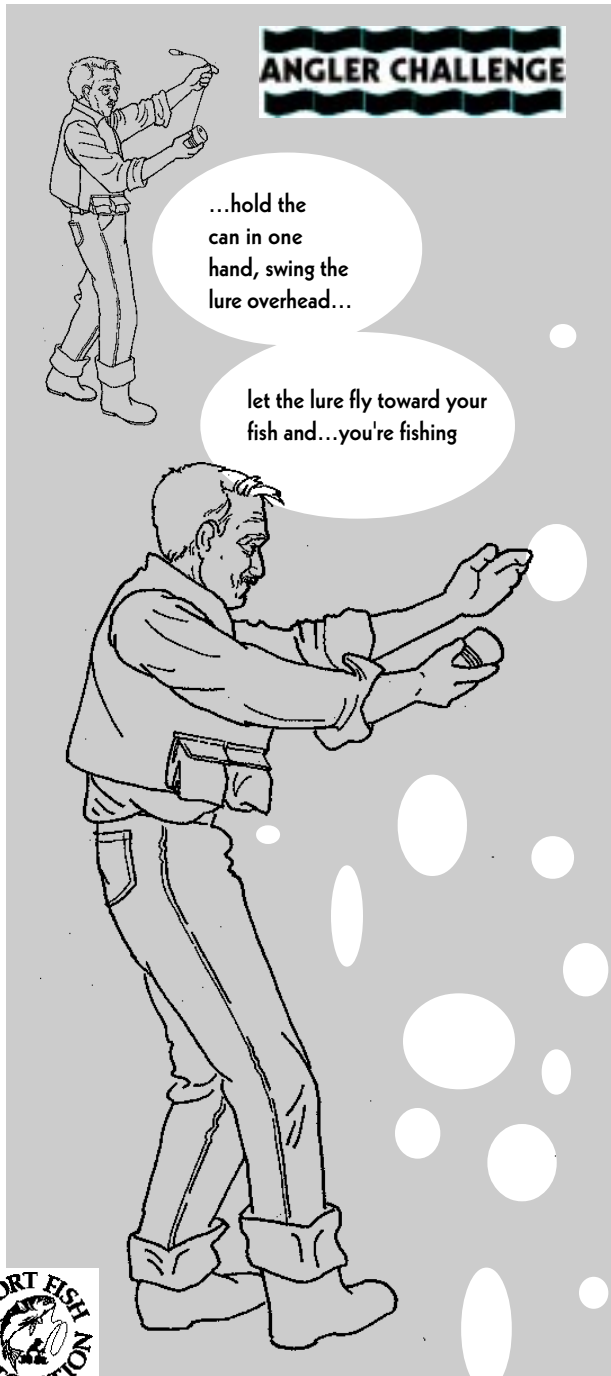


Wrap the line around the bottom  
half of the can...tie  
on your lure...and...



# Tackling Tackle...get reel

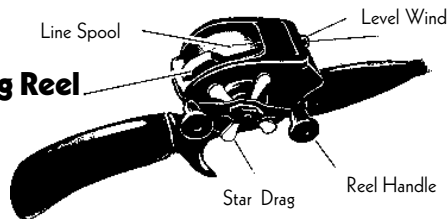
Fishing tackle is the equipment used to catch fish. Your first tackle will probably be a fishing rod, a reel, fishing line and hooks.



## Bait-Casting Rod



## Bait-Casting Reel



Bait-casting tackle looks very different from spinning tackle. The reel holds the line on a spool mounted across the rod. There is usually a strong drag to help control the fish, as well as a button to engage the drag.

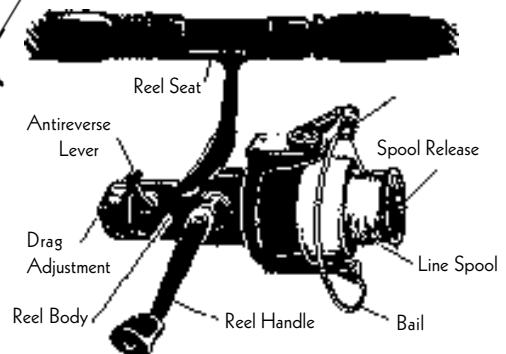
Hope this won't take all day...I wanted to go to the mall.

Good grief...



## Spinning Reel

## Spinning Rod



Spinning tackle is a lot like spin casting except there is no cap over the reel and it is more complicated to cast. There is a bent piece of wire, (the bail) to capture the line

after your cast. The drag for spinning gear is located either at the front or the back of the reel.



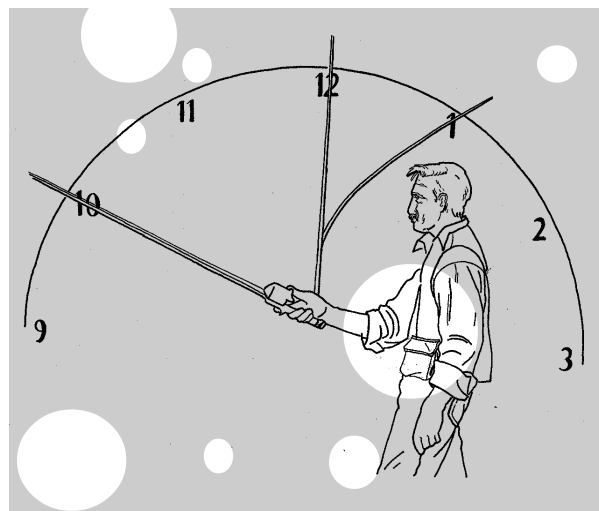
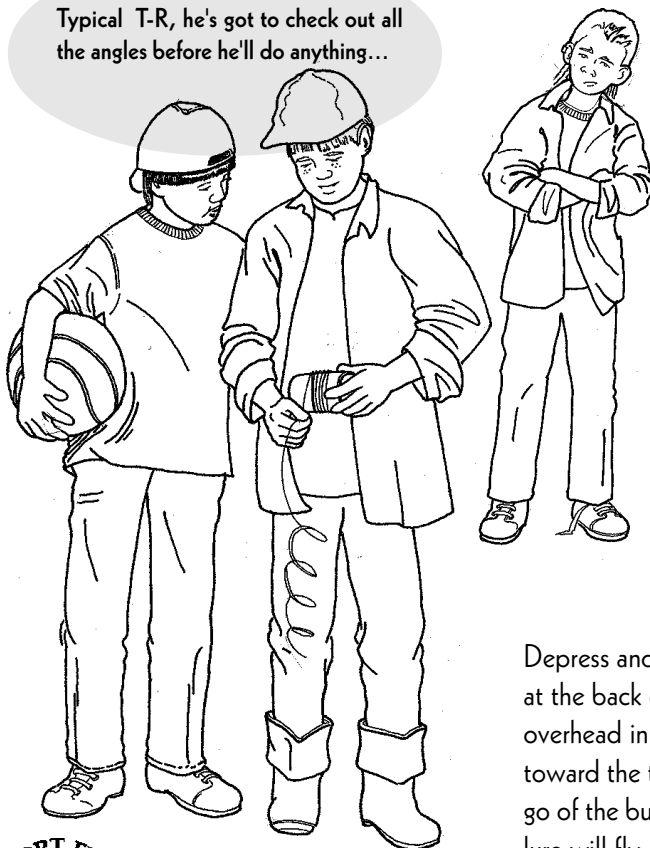
# Casting...practice, practice, practice

Casting is the ability to cast your lure or bait accurately.

## Casting (spin, spinning and bait casting)

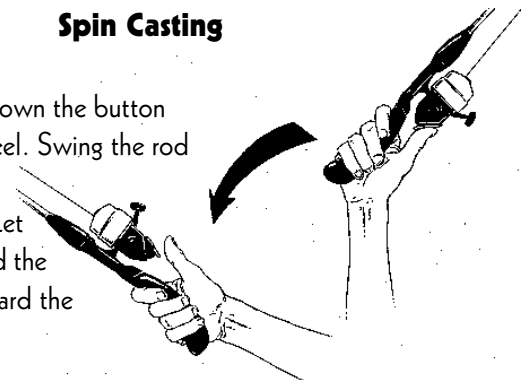
Hold onto the rod with the tip of the rod behind you, away from the place you want your lure to go. Depress and hold down the button at the back of the reel. The line will not go out if you hold the button down. Swing the rod overhead in an arc toward the target. Let go of the button and the lure will fly toward the target.

Typical T-R, he's got to check out all the angles before he'll do anything...



### Spin Casting

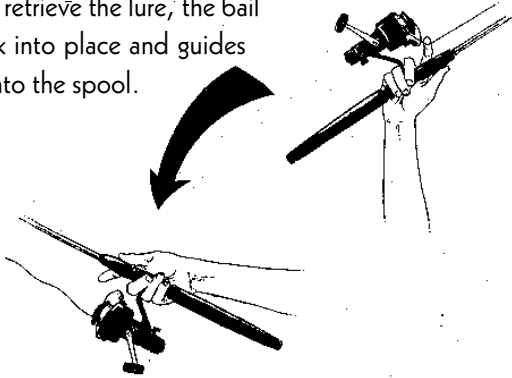
Depress and hold down the button at the back of the reel. Swing the rod overhead in an arc toward the target. Let go of the button and the lure will fly out toward the target.



Federal Aid is short for the Federal Aid in Sport Fish Restoration, first passed as an act in 1950..

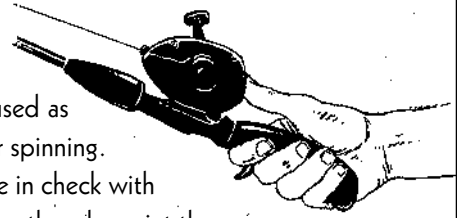
## Spinning Casting

To use a spinning reel, swivel the bail over the face of the spool while holding the line with the tip of one finger. Straighten this finger to let go of the line when you cast. When you retrieve the lure, the bail clicks back into place and guides the line onto the spool.



## Bait Casting

To bait cast the same motion is used as in spin casting or spinning. You hold the line in check with pressure from your thumb against the spool. If you let the reel run freely while casting, you are likely to develop a very bad backlash. Light pressure of your thumb against the spool will help prevent this.



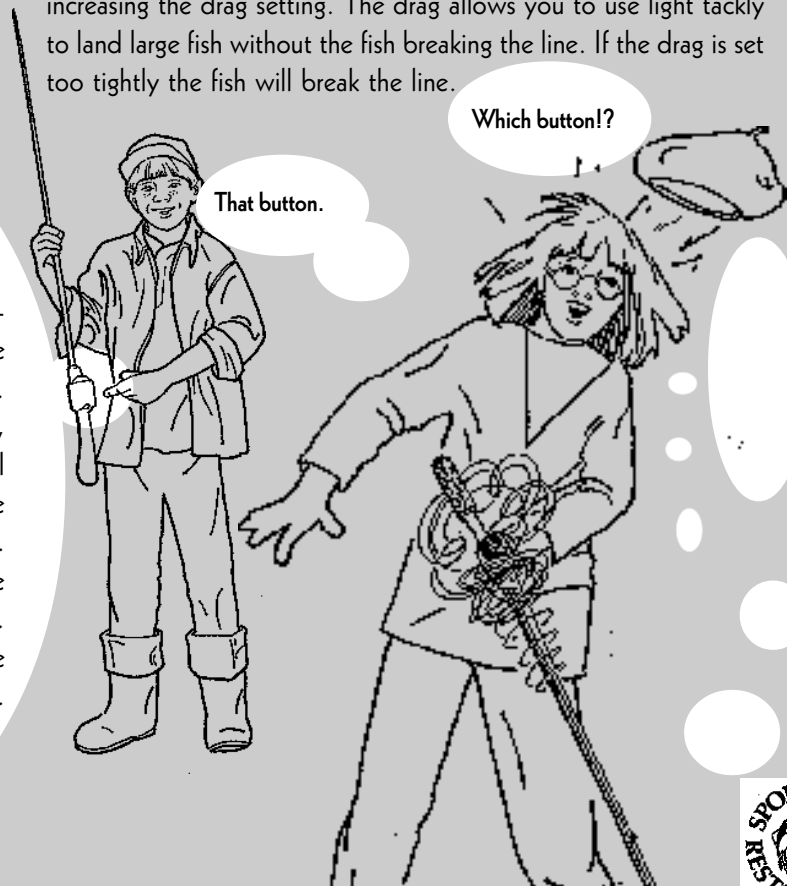
## ANGLER CHALLENGE

### What a draaaag!

A hooked fish may take line off your reel. Slow the fish down by increasing the drag setting. The drag allows you to use light tackle to land large fish without the fish breaking the line. If the drag is set too tightly the fish will break the line.

### Free-Spooling Button

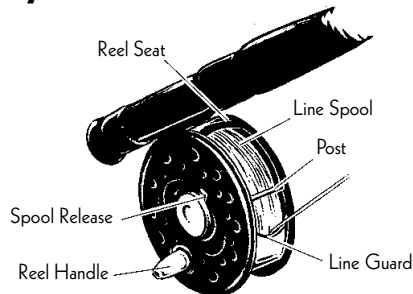
On most reels there is an extra button that allows the line to run free in both directions. If it is slipped the wrong way, your line can tangle into a ball of knots that will make the worst bad hair day seem mild. If the knots are too deep, the line may have to be cut off. Don't let the line run free when you are learning to cast.



# Fly Casting

Unlike spinning and bait casting, where the weight of the lure pulls lines off the reel, flyfishing gear uses a heavy line to cast the fly. The reel is a simple spool to hold the line, the rod is supple and thin.

## Fly Reel



Nice work, Alpha...you've been practicing since last summer.

## Fly Rod

Fly casting tackle is often the simplest equipment, but fly casting is not easily mastered. The reel is a spool

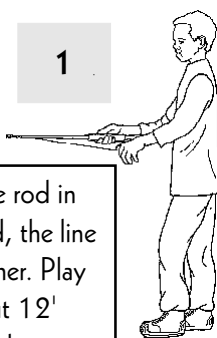
mounted in a frame which attaches to the rod. Flycasting gear uses heavy line to cast a light lure; just the opposite of the other three types of gear. The drag on many fly reels is the pressure of your palm against the rim of the reel.

Thanks.  
Say, when  
are we  
going fishing?



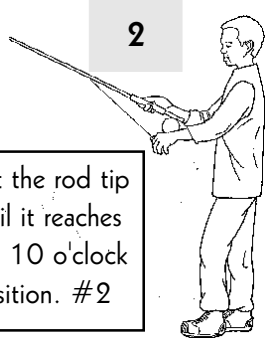
In Alaska, the Division of Sport Fish is fully funded by anglers through contributions to the Federal Aid program and the purchase of sport fishing licenses and king salmon stamps.





1

Hold the rod in one hand, the line in the other. Play out about 12' of line to begin casting. #1



2

Lift the rod tip until it reaches the 10 o'clock position. #2



3

Lift the rod tip quickly to flip the line over your head and behind you. (Beginners keep both hands close together). #3



6

Allow a brief moment for the backcast to straighten out behind you. #6



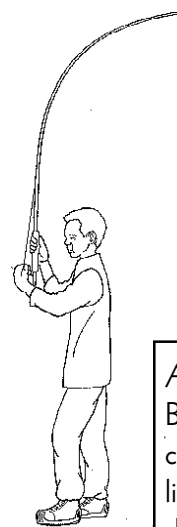
5

Stop at the 1 o'clock position to keep the backcast high. Bring your hands together. #5



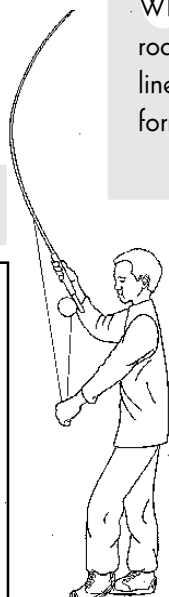
4

Advanced castes: pull the line as you lift the rod to accelerate the line toward the rear. #4



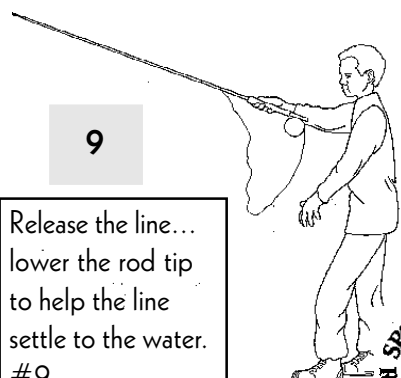
7

Make a smooth powerful casting motion forward to 10 o'clock position. #7



8

Advanced caste: Begin accelerating the line by pulling down as you cast forward to the 10 o'clock position. #8



9

Release the line... lower the rod tip to help the line settle to the water. #9

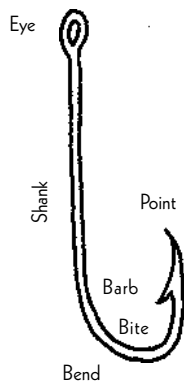
When fly casting, try to keep the motion of the rod back and forth in a single plane and the line moving smoothly. Keep the rod tip high to form narrow loops in each direction.



# Terminal Tackle...the connection

## between you and your catch

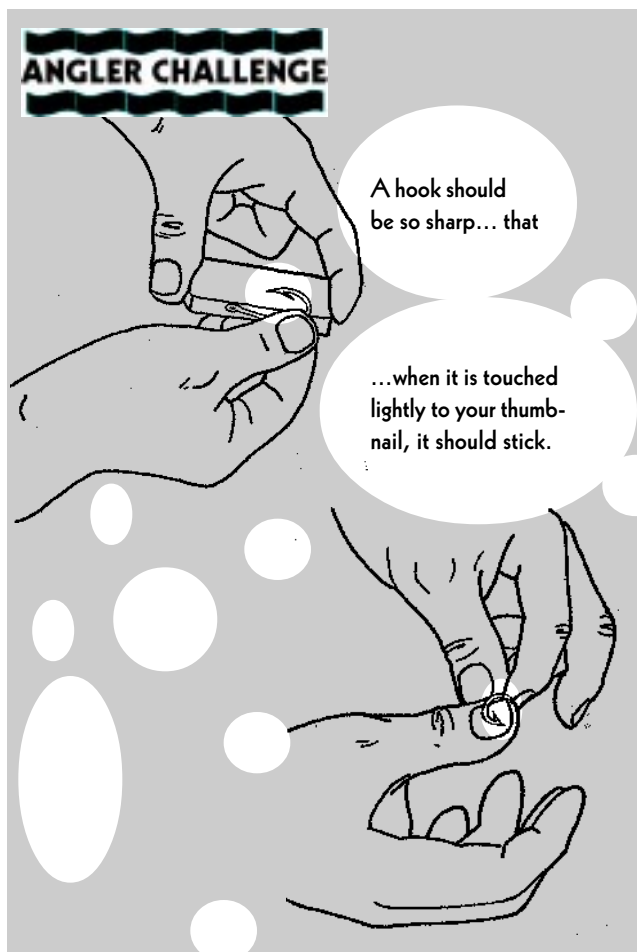
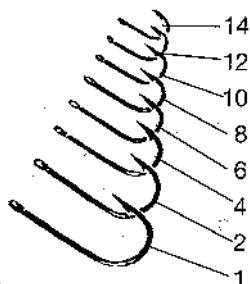
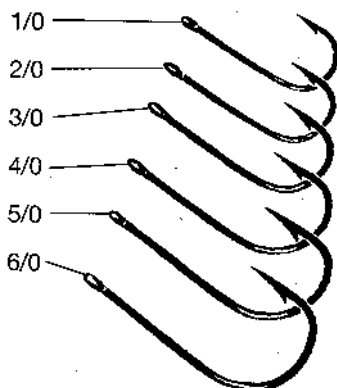
Anything at the end of the fishing line is called terminal tackle.



There are different **hooks** for every kind of fish and fishing. Choose your hook size to match the fish you are after. If you expect to release some of your catch, it is very important to cause the fish little injury. Hook sizes are numbered so that the smaller the hook, the larger the number. A size 1 hook is bigger than a size #2. Hooks bigger than #1 are numbered 1/0 (pronounced one-aught) 2/0, 3/0 etc.



**Swivels** are usually attached between your line and leader, at the weight, or just before the lure. Snap swivels have a clip that works like a safety pin allowing for quick changes of terminal tackle.

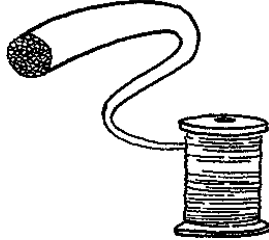


Federal Aid also pays for Aquatic Education, which includes things like this manual.

What  
is Tina  
doing?

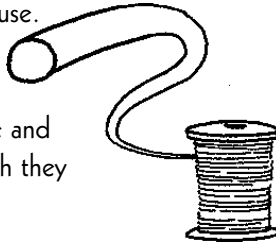


**Braided line** is used for larger fish, for bait casting, or as extra backing line on fly reels.

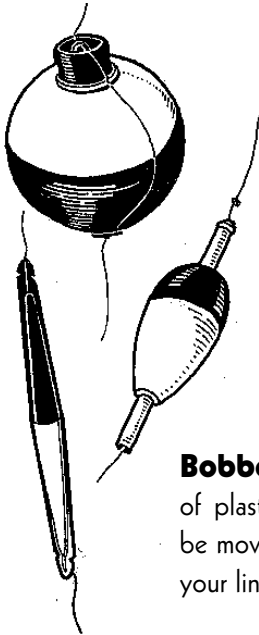
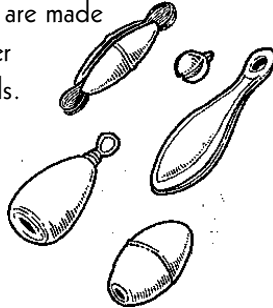


**Monofilament line** is a single strand of nylon line. It is by far the most popular fishing line in use.

Anglers use **leaders** to match the size and fight of the fish they are after.

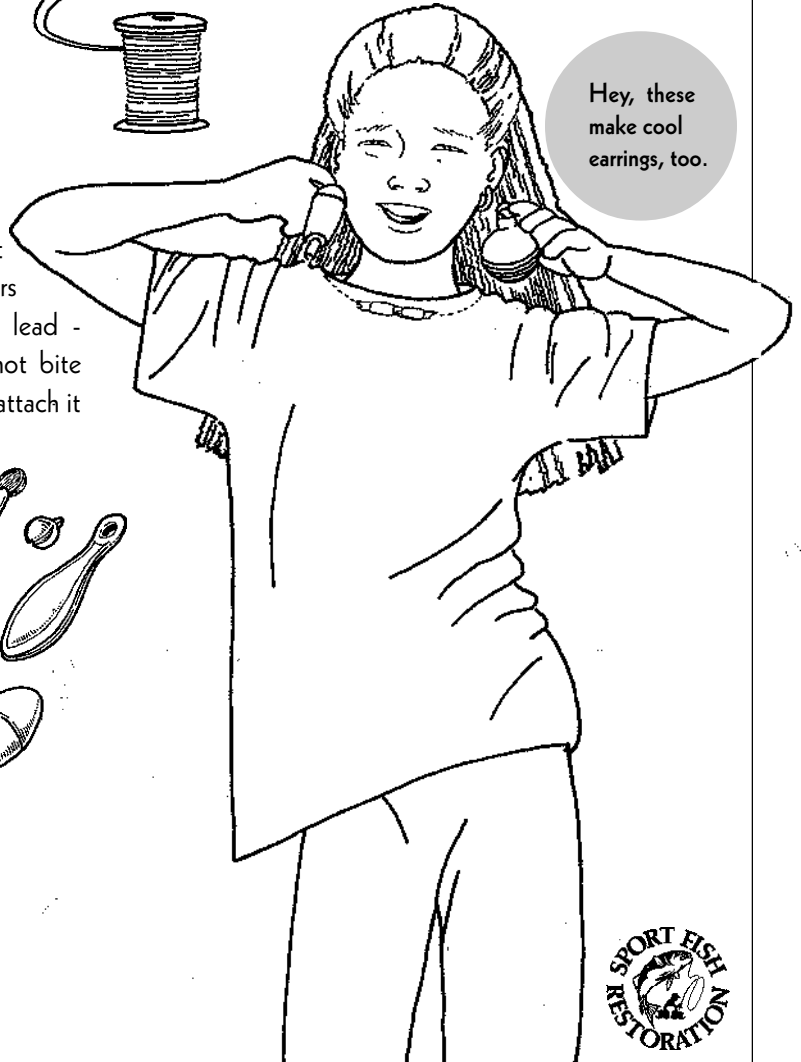


**Sinkers** add weight to your bait. Sinkers have been made of lead - **toxic!** You should not bite down on a sinker to attach it to your line. Newer sinkers are made of other materials.



**Bobbers** are usually made of plastic or foam and can be moved up and down on your line.

**Fly line** weighs more than most other line because it is made of a plastic coating over a braided line. You cast the heavy line: the fly simply follows along at the end of a long monofilament leader.



Hey, these  
make cool  
earrings, too.

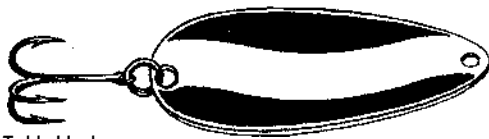


## Not-So-Real Lures

Artificial lures may resemble food or simply attract fish by their color. Fish that strike artificial lures are less likely to swallow the hook than fish that strike bait.



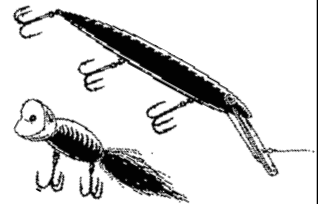
Single Hook



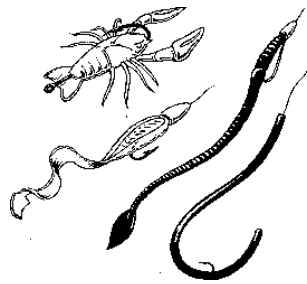
Treble Hook

Fish are attracted to a **spoon** by the wobbling action it produces as you retrieve it or the fluttering action it produces as it settles in the water. Spoons often come with a treble hook attached.

**Plugs** are torpedo-shaped baitfish imitations. They produce a wobbling action when they are trolled or retrieved. Plugs can be very effective and are sturdier than bait.

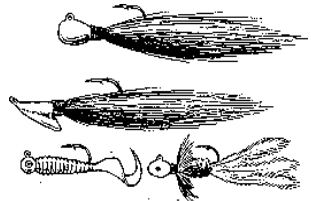


**Spinners** may be fished alone, with a soft plastic lure, or with bait. They are small spoons which spin around a shaft that have the hook attached to one end and the line to the other. Use a swivel with spinners or your line will twist. Their fast action makes them very effective in slow or shallow water.



A **jig** has a weighted head attached to a hook. It is fished by lowering it to the bottom and quickly raising and lowering the tip of the rod. Some jigs are "dressed" with plastic skirts, yarn, or feathers. Jigs are used for halibut and rockfish but work well for a variety of game fishes.

Soft **plastic baits** are used for all kinds of fish. They are used on jigs for halibut and are called hoochies when trolled for salmon. Hoochies are lures that look like squid. They are fished behind a metal flasher which spins through the water and gives a spiraling action to the hoochie. Frogs work very well to catch northern pike.





Geez, Emmett ,  
this is worse  
than my  
locker.

A fine example  
of how to  
organize  
your stuff.

**Flies** are made from fur,  
feathers, thread, and a  
variety of man-made ma-  
terials which are tied onto  
a hook. Fly fishers often  
design and make their own  
flies. Flies imitate food or  
simply attract fish to strike.

Ooops...well ah, see  
I was just trying to  
show you what happens  
if you don't keep your  
gear straight.

Yea, right,  
gramps.

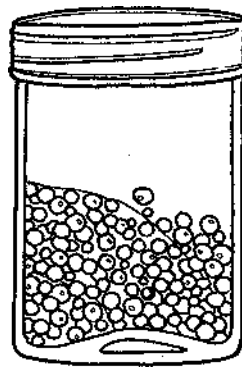


## Natural Baits

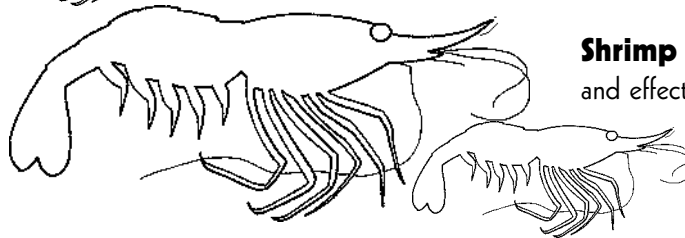
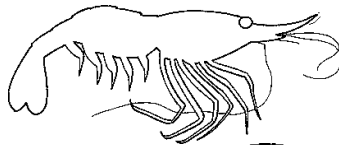
**LIVE FISH MAY NOT  
BE USED AS BAIT  
WHEN SPORT FISHING  
IN FRESH WATER.**

Offer fish what they are eating and you will usually catch them. As you approach your limit, change to lures or flies to limit fish injury. Then you can keep fishing while practicing catch and release.

Anglers like to invent new bait. Just be sure that your bait can be **safely eaten** and **digested** by the fish.

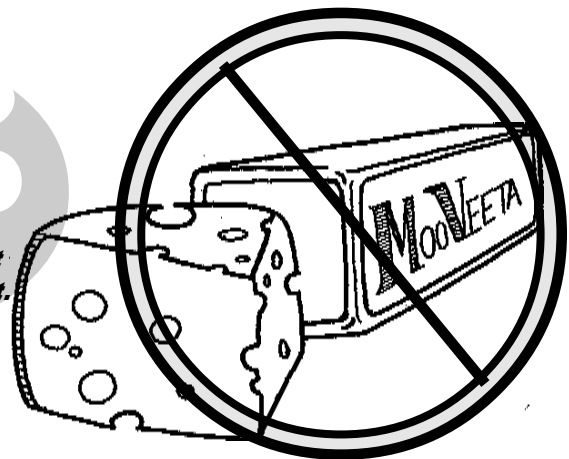


**Salmon eggs** are the most popular fresh-water bait. Eggs may be fished by threading them individually onto a hook or in clusters.



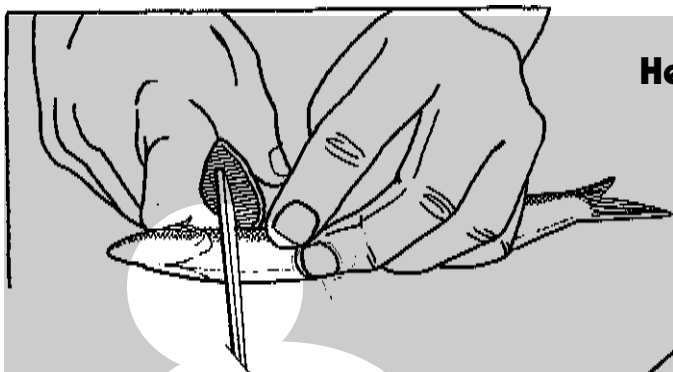
**Shrimp** is also a popular and effective bait.

***Fish cannot  
digest cheese  
or cheese  
products -  
please do not  
use it for bait.***

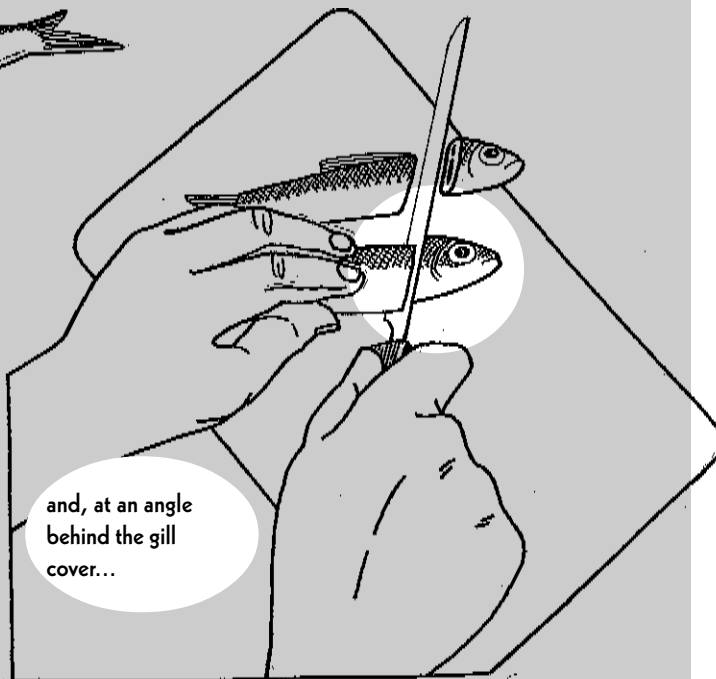


In the past ten years, Federal Aid has paid for over 80 access projects to help anglers and boaters discover Alaska.

## Herring bait

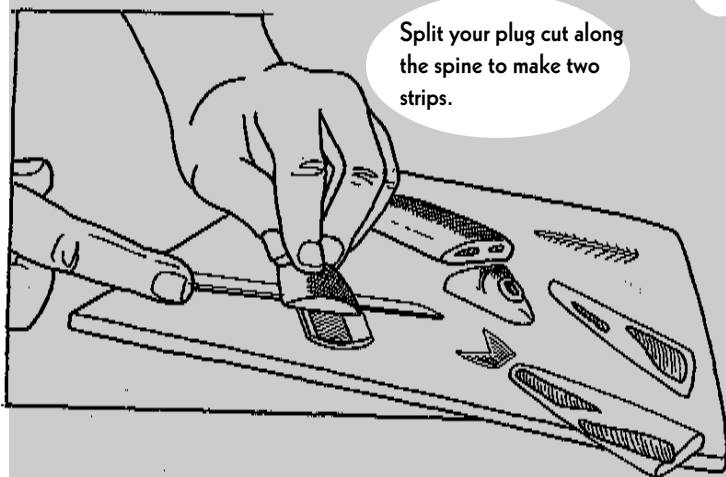


Hold the knife at a slight angle from vertical...



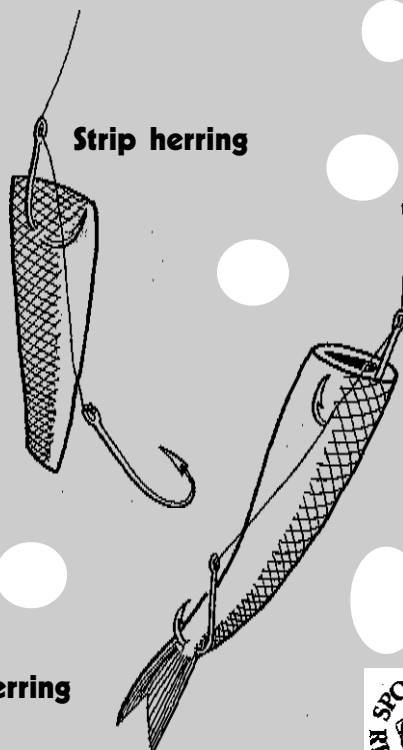
and, at an angle behind the gill cover...

Most sport fish species can be caught on **herring**. Herring is fished whole, as a cut-plug, as strips, rigged backward for halibut or cut into chunks for rockfish. Herring may be threaded, tied, or sewn onto hooks. It is trolled, jigged, or mooched.



Split your plug cut along the spine to make two strips.

## Strip herring



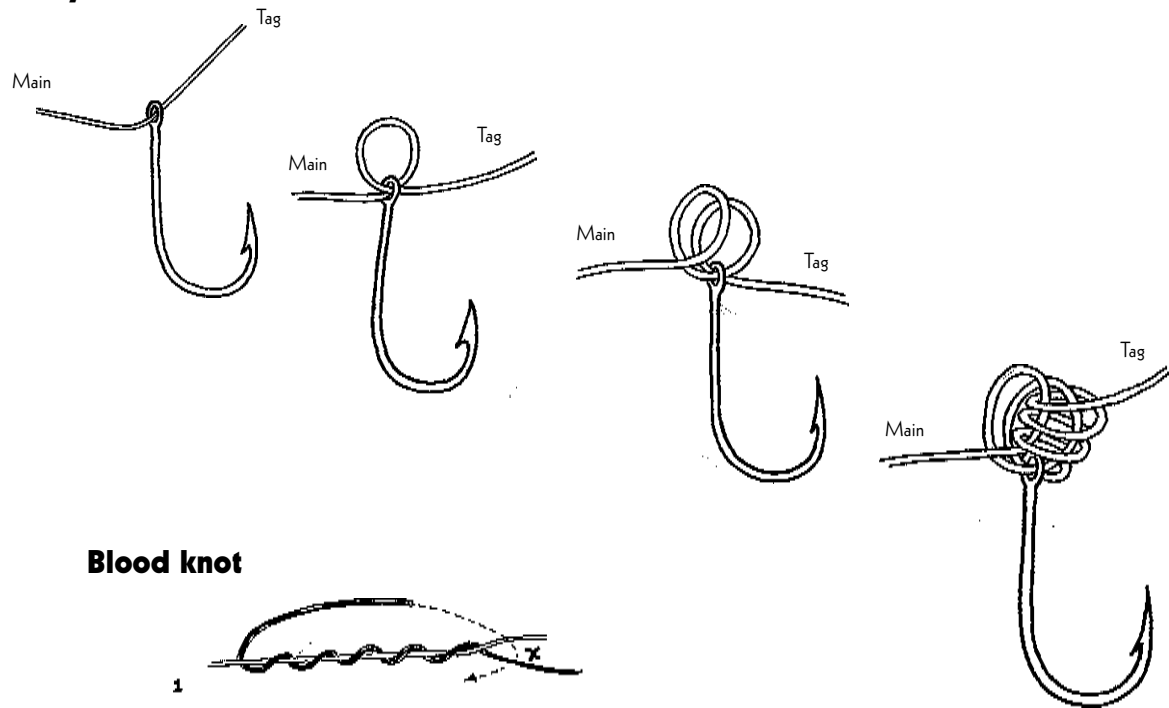
## Cut-plug herring



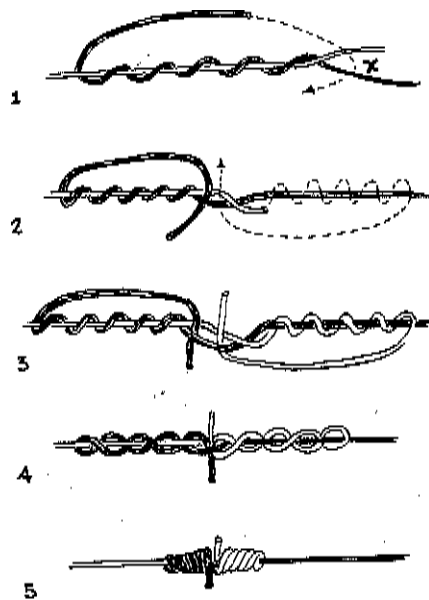
## Knots

Check all knots and line often for wear. Remember, some knots are stronger than others.

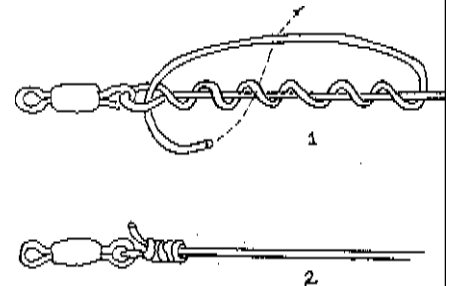
### Lefty's knot



### Blood knot



### Improved clinch







I like the lefty's knot...it's strong and fairly easy to tie.

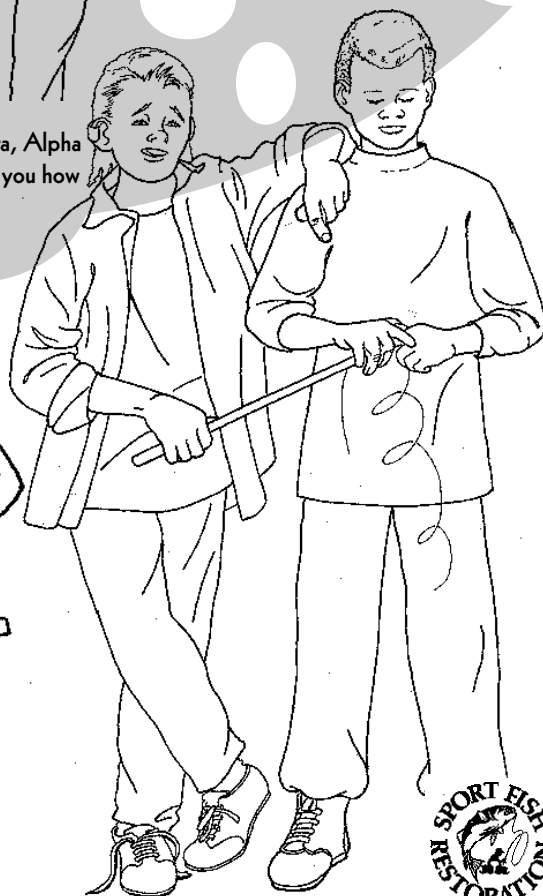
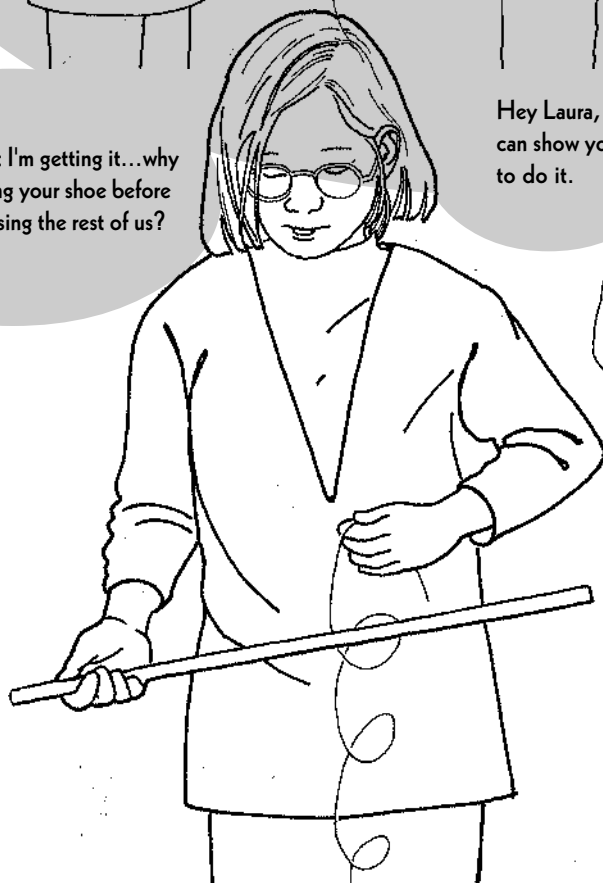
When are we going fishing?

## ANGLER CHALLENGE

You will need a two-foot long piece of rope with 1/4" diameter and a stick about as thick as your finger. Using the illustrations as guides, practice tying each one. Then practice with monofilament and a hook. Try to learn these knots before you go fishing.

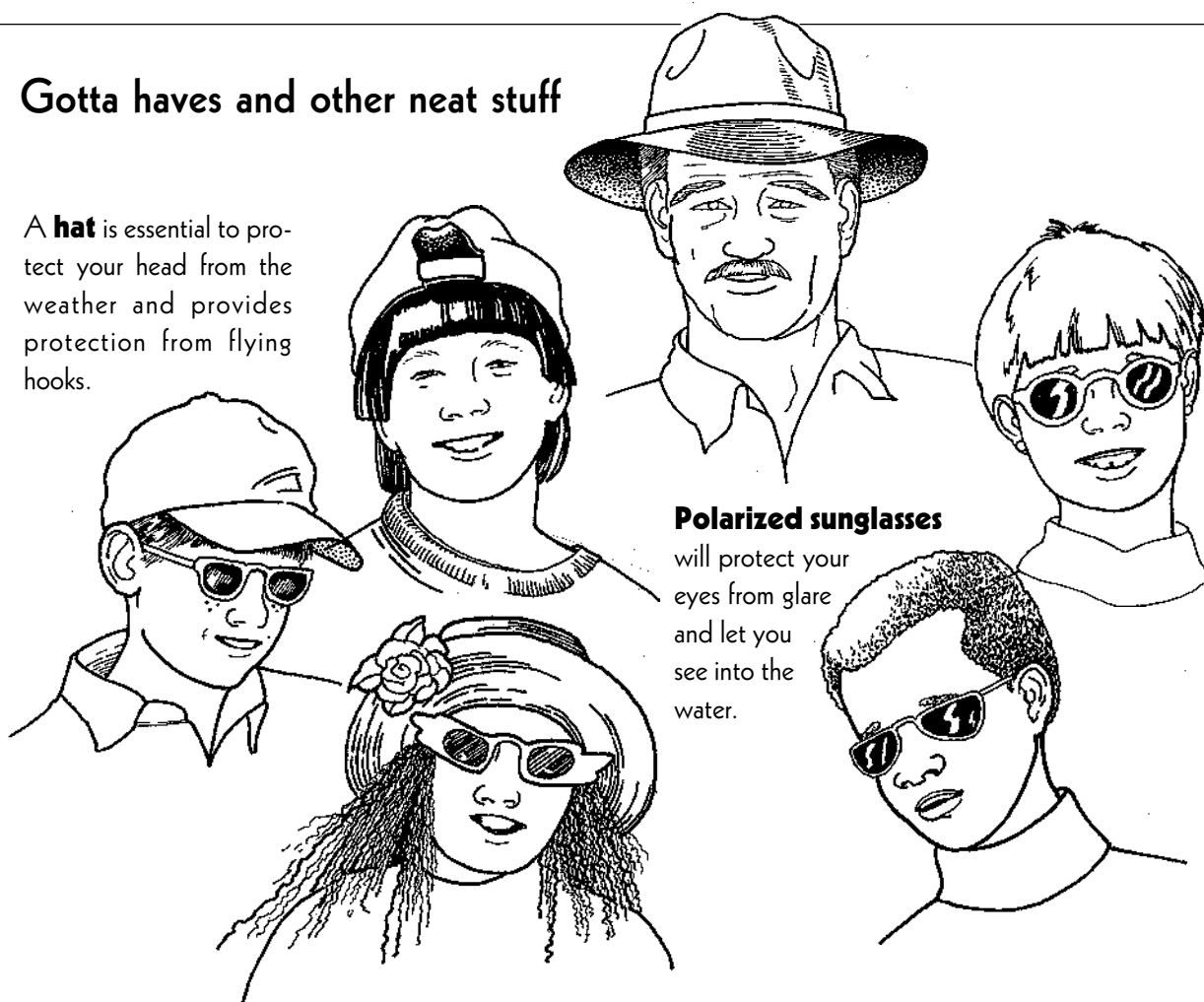
Thanks, T-R, but I'm getting it...why don't you try tying your shoe before you start supervising the rest of us?

Hey Laura, Alpha can show you how to do it.



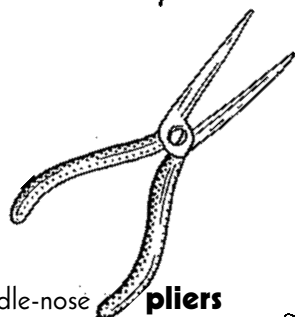
## Gotta haves and other neat stuff

A **hat** is essential to protect your head from the weather and provides protection from flying hooks.

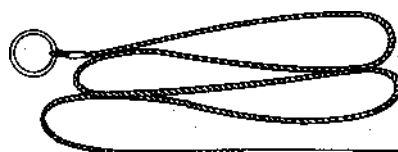


### Polarized sunglasses

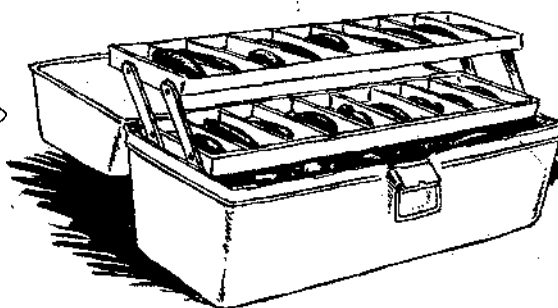
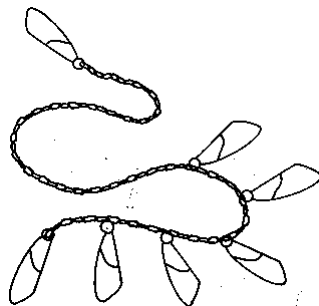
will protect your eyes from glare and let you see into the water.



Needle-nose **pliers** work well as hook removers and in closing lead sinkers. Get a pair that can cut the point and barb off a hook in case of a fishing accident.



With all of the lures, hooks, sinkers, bobbers, and leaders that anglers purchase, they need a **tackle box** to organize

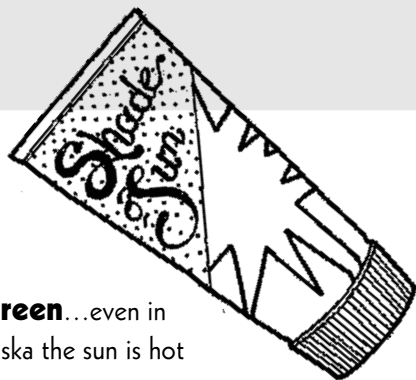


## ANGLER CHALLENGE

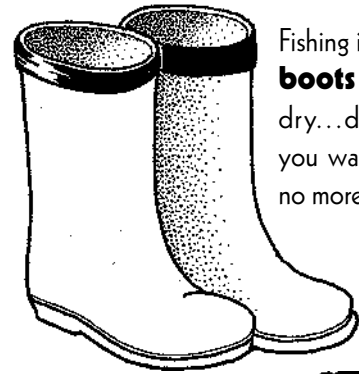
Answer the following questions by filling in the blanks:

1. A \_\_\_\_\_ is the bent piece of metal at the end of the line that attaches the angler to the fish.
2. Spincasting and spinning reels use \_\_\_\_\_ line.
3. When fly fishing, you cast the \_\_\_\_\_ and the fly follows along.
4. A \_\_\_\_\_ is used to float your bait off the bottom.
5. A \_\_\_\_\_ is used to get your bait down to the fish.
6. Soft plastic baits called - \_\_\_\_\_ are used to troll for salmon.
7. A \_\_\_\_\_ attracts fish with its wobbling action./
8. When fishing from a boat or near deep water you should wear a \_\_\_\_\_.
9. A swivel is used between your line and your lure to \_\_\_\_\_.
10. The most popular bait for fishing in fresh water in Alaska is \_\_\_\_\_.
11. It is not legal to use \_\_\_\_\_ to fish in fresh water in Alaska.

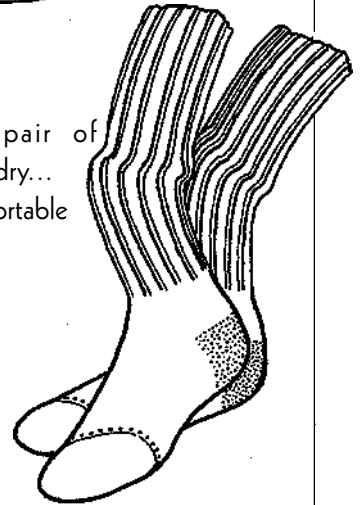
Draw a picture of one complete set of tackle, from rod handle to hook.



**Sunscreen**...even in Alaska the sun is hot



Fishing is wet...  
**boots** keep you dry...dry keeps you warm...I say no more.



An extra pair of  
**socks** are...dry...warm...comfortable



**Bug repellent**...  
don't leave home without it

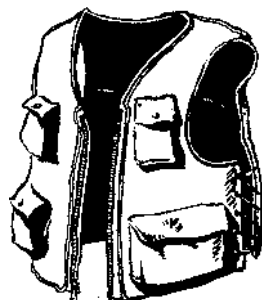
A small **pocketknife** can be used for cutting bait.



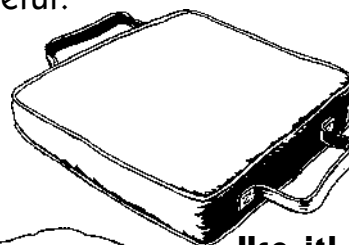
# Fishing Safety

Alaska is wild - wild spaces - wildlife. Be careful.

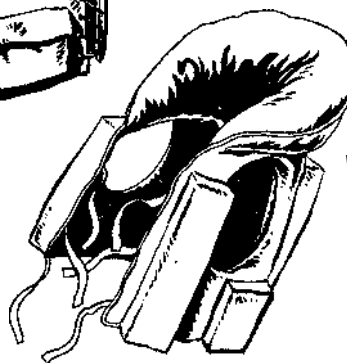
With Alaska's cold waters and deep rivers with strong currents, one slip can prove fatal. Even strong swimmers cannot last long in these waters. You should always wear a **personal flotation device (PFD)** when fishing from a boat or fishing deep waters.



**Wear it!**



**Use it!**



**Wear it!**

Do these come  
in designer  
colors?



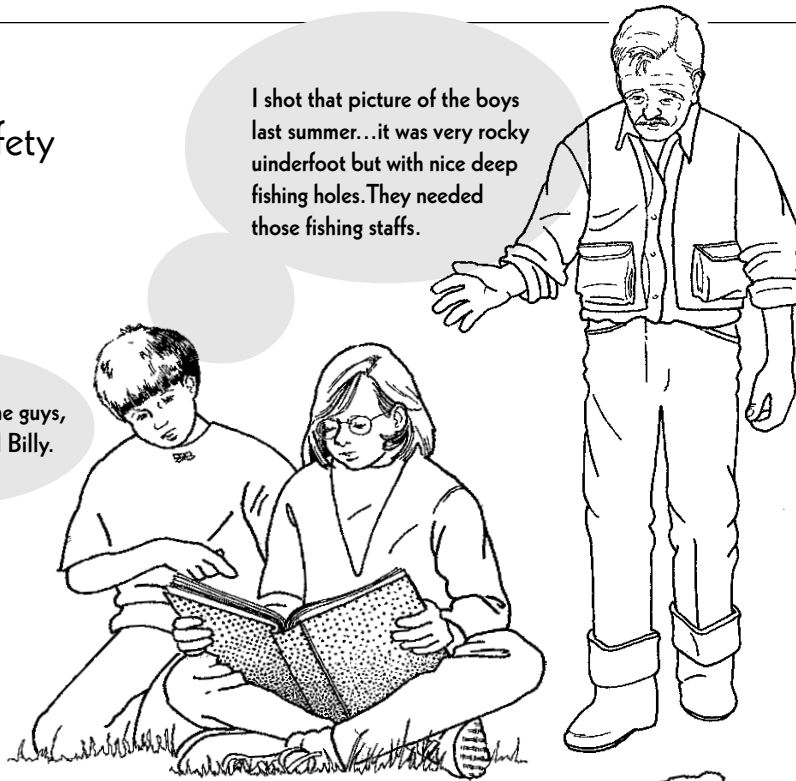
Gimme a break...



## Wading Safety

I shot that picture of the boys last summer...it was very rocky underfoot but with nice deep fishing holes. They needed those fishing staffs.

Hey, there are the guys, Clay, Alpha and Billy.

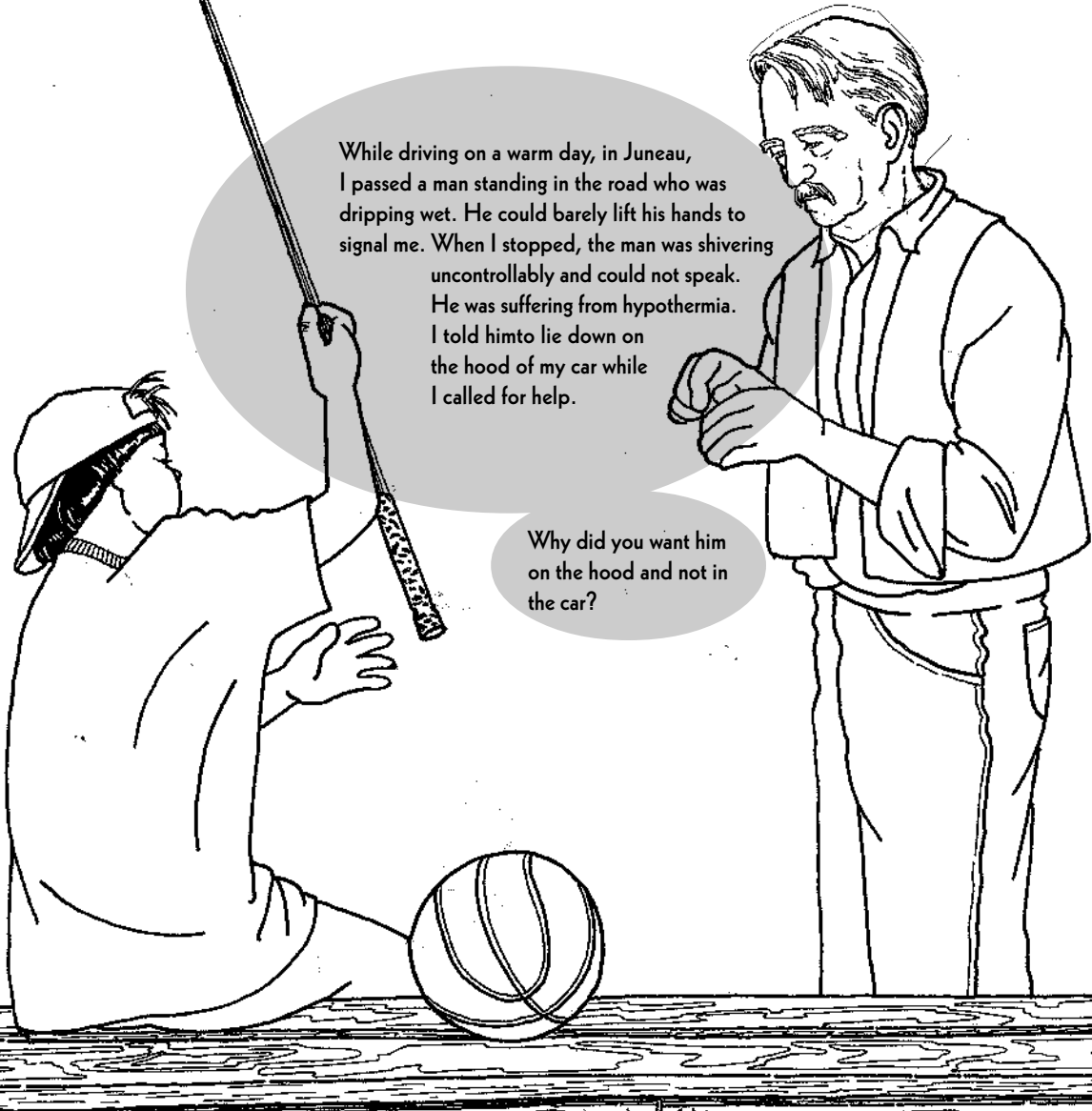


1. Wade with a friend.
2. Wear your flotation device.
3. Know your body of water.
4. Avoid swift currents.
5. Be sure of the bottom before you step.
6. Carry and use a wading staff.



## Hypothermia

Hypothermia occurs when the body chills faster than it produces heat. Exposure to wind, wet or cold can cause hypothermia - it does not have to be freezing out. Signs of hypothermia are prolonged shivering, fumbling with the hands, slurred or slow speech, stumbling or sleepiness.



While driving on a warm day, in Juneau, I passed a man standing in the road who was dripping wet. He could barely lift his hands to signal me. When I stopped, the man was shivering uncontrollably and could not speak. He was suffering from hypothermia. I told him to lie down on the hood of my car while I called for help.

Why did you want him on the hood and not in the car?



Through Federal Aid, anglers help pay their way!

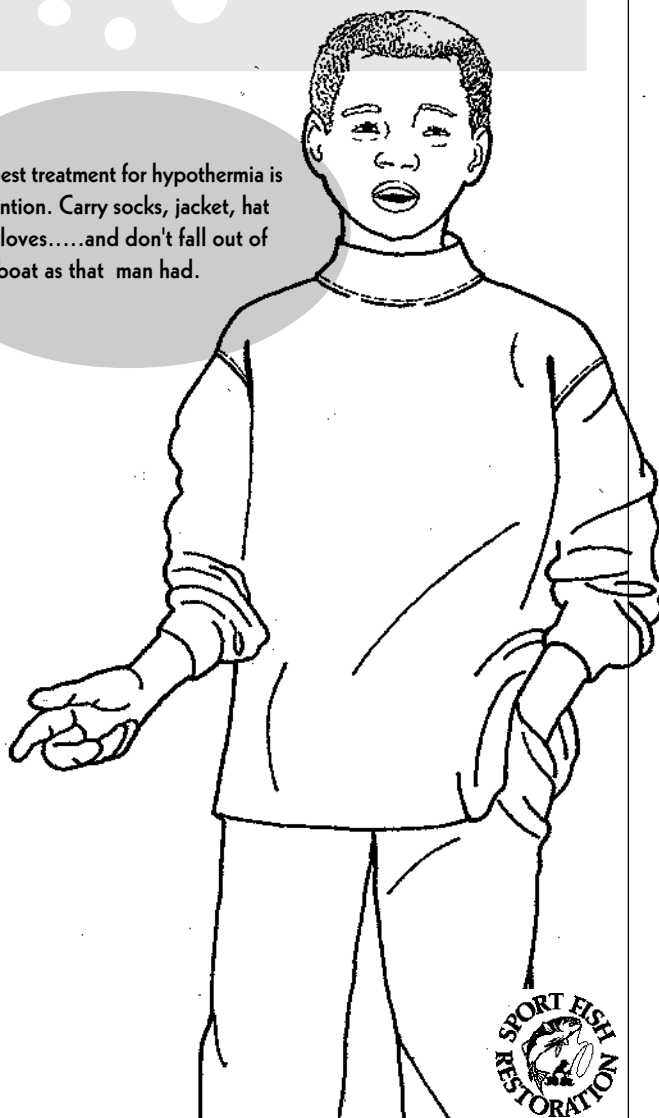
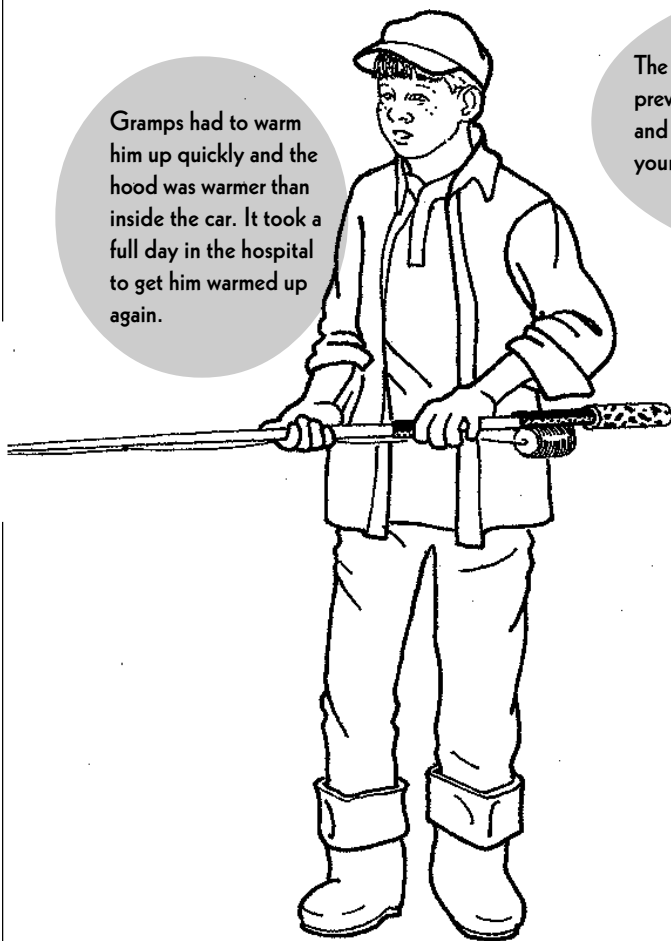
## H. E. L. P.

If you fall into cold water with a PFD on, don't thrash around. Excess movement speeds up heat loss. Instead, bring your knees up towards your chin and bend your legs as though you are sitting. This is called the Heat Escape Lessening Position or "H. E. L. P." This position helps hold body heat and slow cooling.



Gramps had to warm him up quickly and the hood was warmer than inside the car. It took a full day in the hospital to get him warmed up again.

The best treatment for hypothermia is prevention. Carry socks, jacket, hat and gloves....and don't fall out of your boat as that man had.

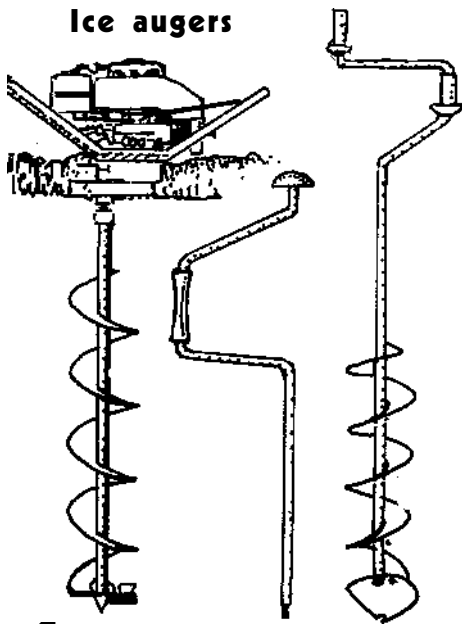


## Ice Fishing Safety

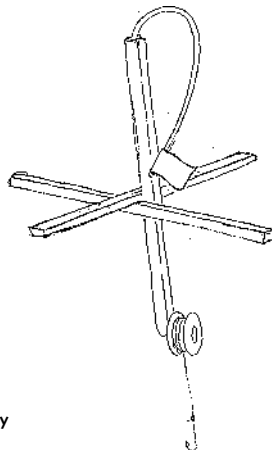
When you are not absolutely sure the ice is safe, chop or drill a hole in the ice to test its thickness. Dress warmly and be aware of cold feet, hands, and face. Fish with a buddy and check each others' nose, cheeks, and ears for white spots that indicate frostbite. If you see any signs of frost bite, cover - do not rub - the affected areas to keep in heat and get warm.



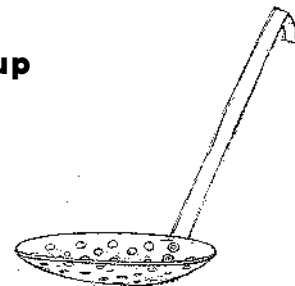
**Ice augers**



Ice fishing rods are generally short. The simplest ones don't have a reel. Instead they have a small cleat to wrap the line around. When fishing in water over 15 feet deep, a rod with a reel is a good idea. Alaska's sport fishing regulations allow anglers to have two lines with one hook each for ice fishing. For ice fishing you will need an **auger** to make a hole in thick ice and a **dipper** to clear the hole of slush, ice and snow.



**Tip-up**



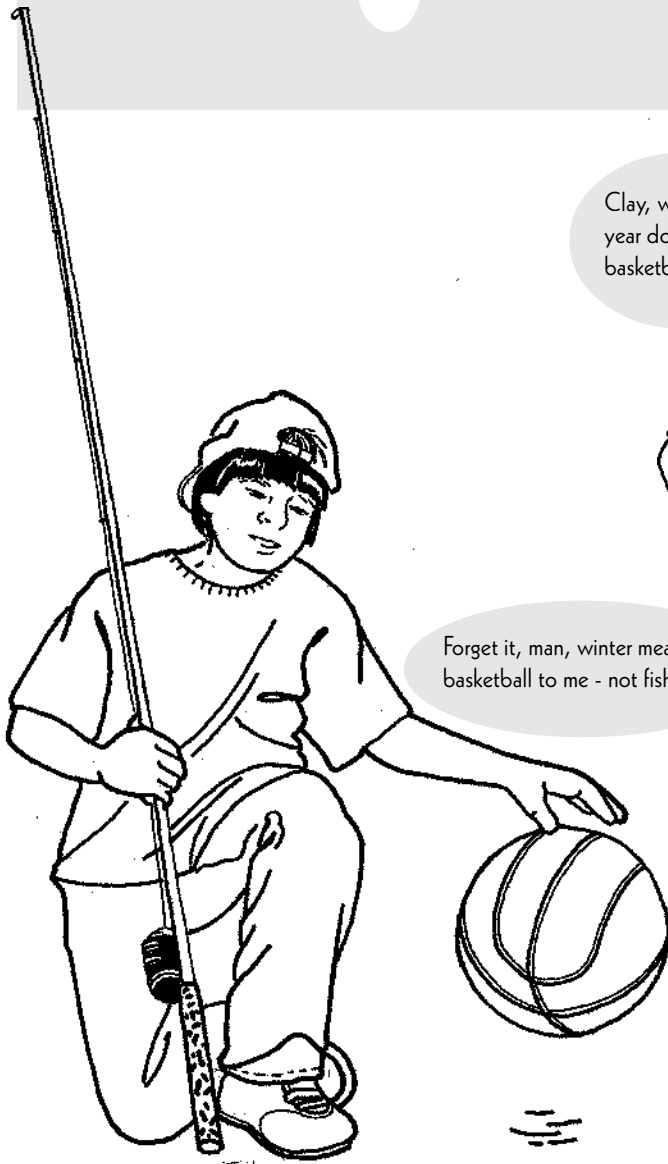
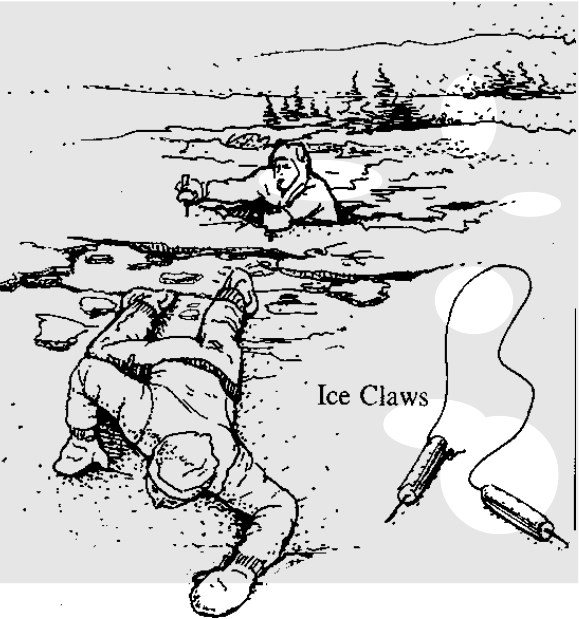
**Ice strainer**



The federal tax anglers pay on fishing tackle and motorboat fuel comes back to the state to help pay for sport fish management.

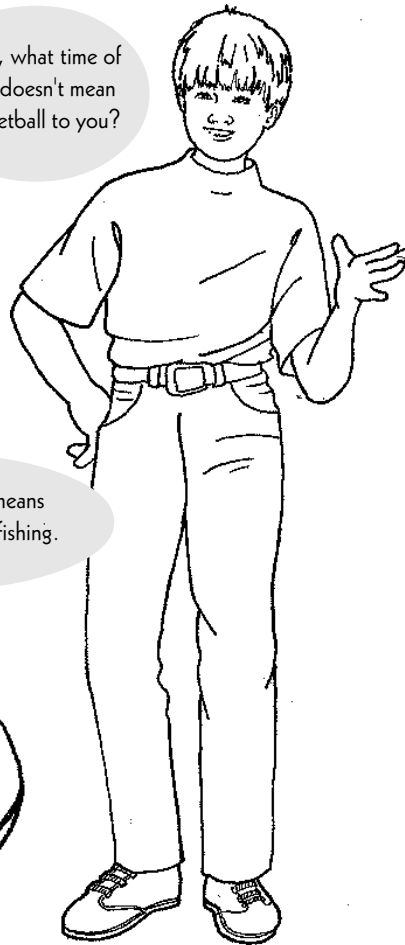


People drown after they have fallen through thin ice and cannot get out. Large lakes may have ten inches of ice near shore and still have open water in the middle. On rivers, ice thickness varies according to the strength of the current beneath and local air temperature. River ice is also weaker than lake ice.



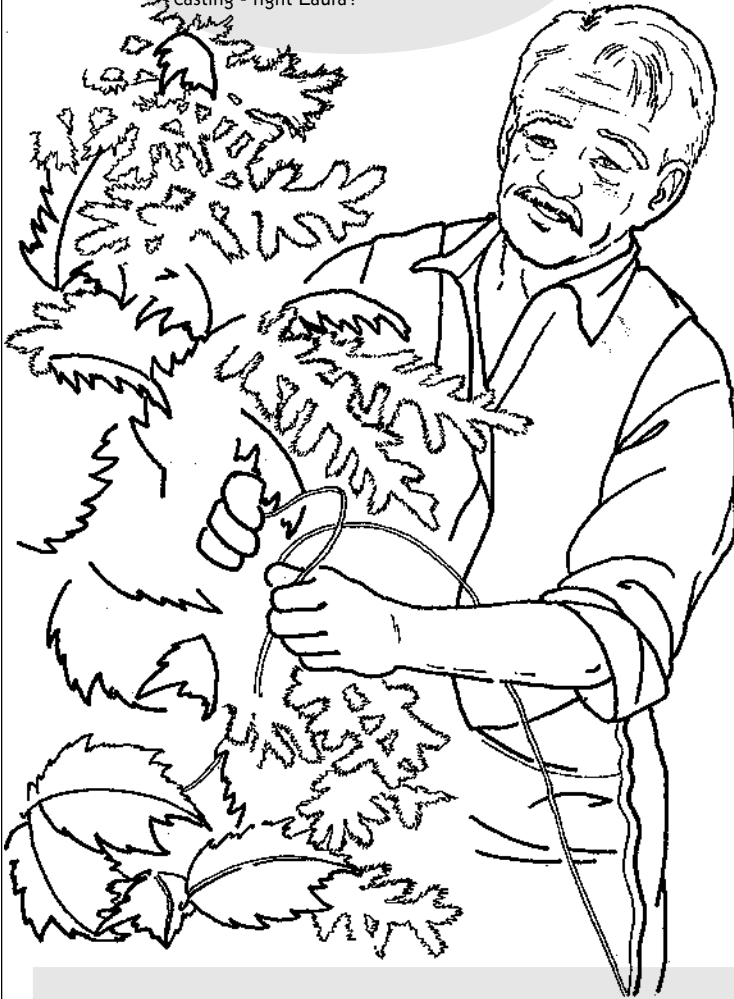
Clay, what time of year doesn't mean basketball to you?

Forget it, man, winter means basketball to me - not fishing.

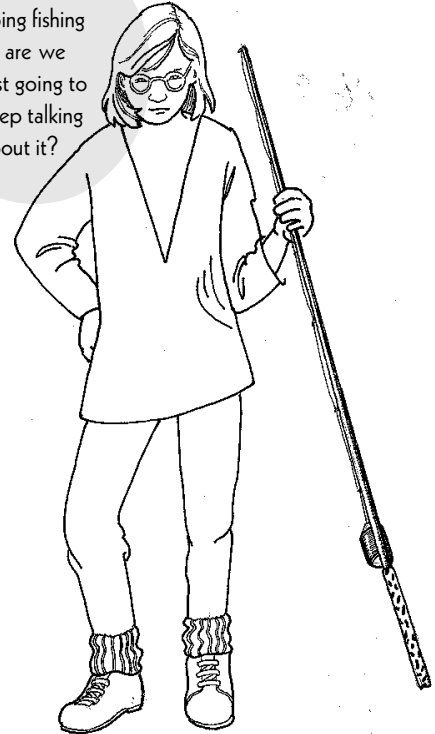


## Remember...always check behind you when casting!

Even though we're not using hooks while practicing, it's best to follow safety procedures - check behind you before casting - right Laura?



Are we ever going fishing or are we just going to keep talking about it?

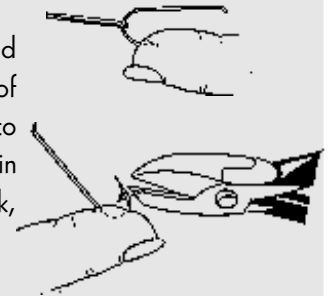


### Removing a Hook From Your Skin

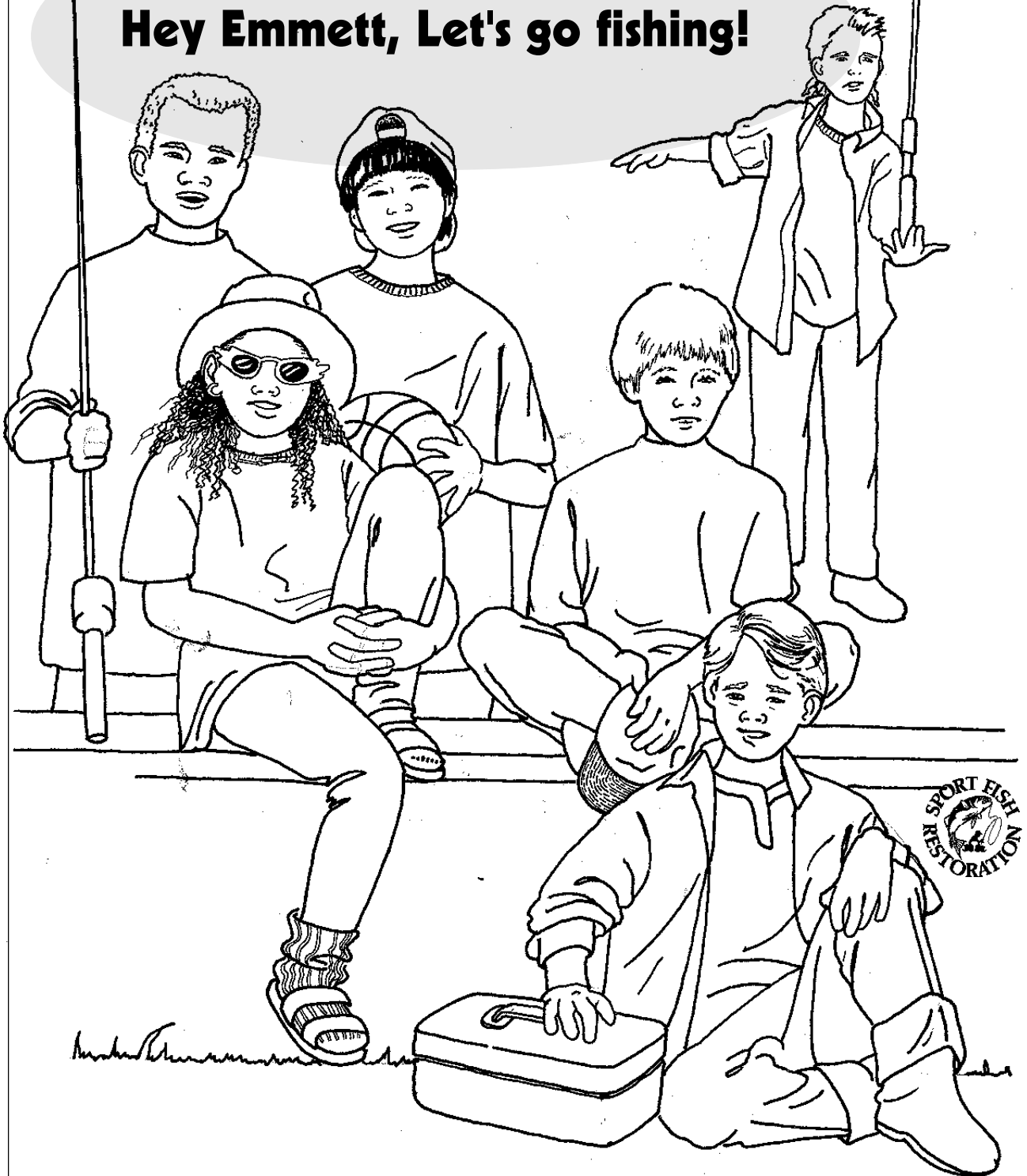
You should never try to remove hooks from sensitive areas like the face, eye or back of the

hand. Let a doctor do it! A hook can be removed if it is not in a vital area. First, cut the hook away from the rest of the fishing lure. Put a loop of twine or fishing line around

the bend of the hook. Hold down the eye and shank of the hook, pressing it lightly to the skin. Grasp the loop in the line and, with a sharp jerk, pull the hook free.



**Hey Emmett, Let's go fishing!**



# And just who is responsible for this handbook?

## **Alaska Department of Fish & Game**

Written by Jon Lyman

All character illustrations by Ashley A. Dean

## **Other graphics contributed by**

"**Sport Fishing and Aquatic Resources Handbook**," Alaska Aquatic Education, Division of Sport Fish; p. 4, spin-casting rod and reel; p. 5, bait-casting rod and reel, and spinning rod and reel; p. 6, spin casting; p. 7, spinning casting and bait casting; p. 8, fly rod and reel; p. 10 hooks; p. 12, spoons, plugs, spinners, plastic baits and jigs; p. 13, flies; p. 18, stringers and tackle box; p. 20, PFD's; p. 23 H. E. L. P; p. 24, ice fishing.

"**Casting Equipment**," Aquatic Skills Series, Missouri Department of Conservation; p. 16, blood knot and improved clinch.

"**Basic Fishing**," Aquatic Skills Series, Missouri Department of Conservation, p. 26, removing hook.

"**Alberta Fishing Education**," Alberta Forestry, Lands and Wildlife; p. 24 ice augers and tip-up; p. 25, ice claws.

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