



Get Hooked... It's fun to fish

Schools Recreational Fishing Program

Presenter's Guide





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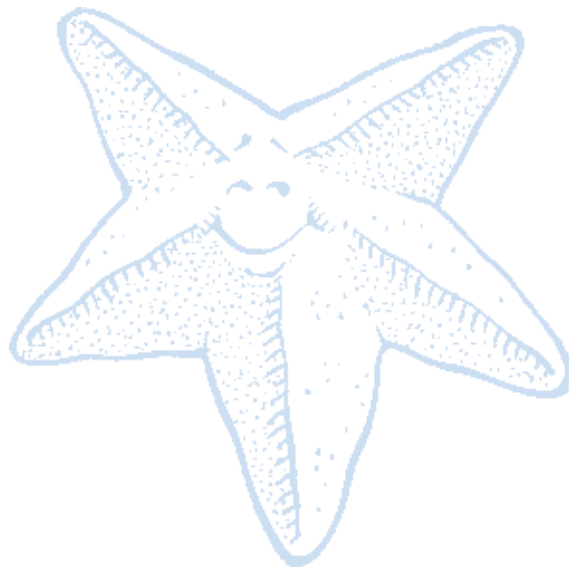
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The *Get Hooked ...It's fun to fish* program involves two components, a Schools Recreational Fishing Program, and a National Junior Fishing Codes Education Kit which consists of a series of six 45-minute classroom sessions, developed by Fisheries Victoria with support from the Natural Heritage Trust. This kit covers a Junior Code of Conduct related to fishing, and is linked with SOSE and Science learning outcomes in the CSFII. It is designed to be delivered by primary school teachers and may be downloaded via the DPI internet site www.dpi.vic.gov.au/fishing

Program Background



Recreational fishing is enjoyed by over 550 thousand Victorians each year. It is a form of recreation that is accessible to all sections of the community, with a wide range of fishing opportunities being available in this state.

In 2000 the State Government allocated significant resources towards a Fishing Participation Initiative. The central component of the Initiative was the Schools Recreational Fishing Program which operates under the *Get Hooked... It's Fun to Fish* title. The Schools Program was officially launched in October 2001 and by late 2003 has been delivered to over 80 different primary schools throughout all regions of Victoria, providing knowledge, tuition in basic fishing skills, and a real fishing experience for over 2000 students. The Schools Program has been highly commended by principals, teachers and parents at the schools to which it has been delivered.

A major goal, and resultant success of the program, has been the involvement of volunteers from angling clubs to assist with the delivery of the program to schools. In fact the use of these volunteers has been crucial to the success of the program, with several hundred volunteers representing over 50 angling clubs donating their time, enthusiasm, and specialised local knowledge, to enrich the program greatly. In more recent times, additional volunteer support has come through the regional Fishcare groups, enriching the program even further.

In recognition of the value of the Schools Program in promoting sustainable participation in recreational fishing and the associated care for aquatic environments to students, the Victorian Fishcare Program has decided to adopt the program and continue it's availability to Victorian schools. The program is also entering a new phase which will see its delivery to schools being undertaken by independent teams of Fishcare and/or angling club volunteers, who have attended a recognised Presenter Training Course.

This Presenter's Guide is accompanied by a Student Workbook which contains instructional information on basic fishing skills, and introduces young people to the formal regulations that govern recreational fishing practices in this state. It also enables students to recognise popular species of fish that are targeted by anglers, and identifies techniques that should be used to catch them.

The continuation of the program under Fishcare will ensure that students and their teachers will be provided with an enjoyable and valuable experience which will lead many of them to a life long interest in fishing. Educating young people in sustainable fishing practices is a vital and valuable investment in the future of recreational fishing in the State of Victoria.



Contents



Program Background	iii
Suggested Course Outline	vi
For the Presenter	
Session 1 - Getting Started	1
Session 2 - Learning the Rules	3
Session 3 - Almost Ready	4
Session 4 - Let's Go	5
Equipment Checklist	6
Appendices	
Appendix 1- Fish Identification Activity	7
Appendix 2- Fishing Safely Crossword	10
Appendix 3- Bait Bucket Activity	11
For the Teacher	
Appendix 4- VICTAG Assignment	14
Appendix 5- Fish Biology Assignment	18
Get Hooked...Cross-links	21
Victorian CSF II Links	22



Suggested Course Outline:



Session One - Getting Started:

- Introduction
- Tying Fishing Knots
- Rod and Reel Basics
- Casting Technique

Session Two - Learning the Rules:

- Fish Identification
- Fishing Regulations
- National Junior Fishing Codes
- Fishing Safely

Session Three - Almost Ready:

- Advanced Casting Skills
- Bait Selection and Identification
- Construction of Fishing Rigs

Session Four - Let's Go:

- Fishing Excursion

Tackle Tip: Murray Cod

A powerful native fish, that is also the largest freshwater fish in Victorian waterways.

Tackle: Medium to heavy lines. Hooks size 2-4/0. Medium to large deep diving lures.

Bait: Yabbies, scrubworms, bardi grubs, shrimps.

Tips: When bait fishing cast towards snags in rivers. Casting lures can also be productive.





For the Presenter

Session One - Getting Started

Aim

At the end of the session students will be familiar with the following basic skills which are applicable to most fishing situations:

- Tying several fishing knots
- Casting a rod
- Assembling a fishing rod and reel
- Correct hand positions for using a rod
- The basic features of a reel
- The importance of a correctly set drag on a reel

Description

The session will begin with a general introduction and discussion aimed at introducing the program and getting to know the fishing background of the students. The supervising teacher should introduce the volunteer presenters. The students will then be divided into three even groups and will be rotated through the following three clinics.

Clinic A. Tying Fishing Knots

Students will be shown how to tie several knots and then be given opportunity to practise tying these knots for themselves. At first the students can work with thicker rope and cord, and then progress to mono-filament line as their confidence grows. Students should initially practise one knot until they can tie it confidently.

Some or all of the following knots will be covered:

1. Locked Half Blood Knot
2. Clinch Knot
3. Figure of Eight
4. Double Blood Knot

Students will be referred to diagrams of the steps involved in tying these knots, and can be given a length of line and a swivel so they can practise these knots at home.

Note: Each student should be presented with a copy of the Student Workbook during the knot tying clinic.

Equipment and Resources

Rope and/or cord, fishing line, large example hooks, medium sized hooks (Barbs and points removed), swivels, several pairs of scissors or line clippers, etc.

Reference

Student Workbook (pages 2-5).

Clinic B. Rod and Reel Basics

Students should be guided through the following steps:

1. Assembling a two-piece rod and aligning the runners.
2. Fitting a reel to the reel seat and deciding with which hand the reel will be operated. The general consensus is that the dominant hand should hold the rod and the weaker hand should wind the reel. Therefore a right-handed person would wind the reel with their left hand, and vice versa for a left-handed person.
3. Releasing the line from the line clip, threading the line under the bail arm, and then loosening the drag so that the line can then be threaded through the runners. (Instruct students to loosen the drag about three full turns anti-clockwise, and to pull about a metre of line through the top runner).
4. Tying on a casting plug, (in the case of groups that have already completed the knot tying workshop), or else this should be done by the presenter.



5. Holding the rod at a 45-degree angle with their dominant hand on the fore-grip and their other hand on the handle of the reel.
 6. Learning to set the drag correctly so that some line can be taken off the reel under pressure without danger of the line being broken. Presenters will walk backwards pulling on the line whilst students adjust the drag until a desirable setting is achieved.
 7. Winding the line back onto the reel in a situation that simulates the feeling and action of playing a fish.
 8. Dismantling the rod and reel, with emphasis on securing the line in the line clip and not holding the runners for leverage when breaking the rod down. (Students will need to have rods broken down and reels dismantled ready for the next group).
3. Holding the line at the reel with the index finger, opening the bail arm, and then bringing the index finger back against the fore-grip.
 4. Making sure that there is no person or obstacle behind them when they are about to cast, and then moving the rod back to a 2 O'clock position.
 5. Bringing the rod forward in a smooth vertical motion and releasing the line from the index finger at a 10 O'clock position.
 6. Looking forward at the area in which the cast is to land.

Students should be given the opportunity to develop accuracy by trying to cast into hoops on the ground.

Equipment and Resources

5-10 rods and reels assembled with casting plugs. Sports hoops and cones (School to supply).

Reference

Student Workbook (Page 6).

Equipment and Resources

10 reels (with line), 10 rods (not assembled), 10 casting plugs, line clippers.

Clinic C. Correct Casting Technique

Correct casting technique should be explained and demonstrated and students given time to practise their casting (either individually or in pairs). The following points should be emphasised:

1. Bringing the line roller into a position directly under the rod.
2. Having about 30-40cm of line extending beyond the rod tip

Summary

After student have been rotated through the three workshops they should be brought back as a whole group, and the skills learnt during the first session can be summarised. A brief description of what will be covered in the next session can be provided. (Note: The teacher should collect all of the student workbooks and keep them secure until the following session).



Session Two - Learning the Rules



Aim

At the end of the session students will have knowledge of, and familiarity with:

- The common fish species caught by recreational anglers
- Minimum size limits placed on these fish and how they are determined
- The concepts of catch limits and possession limits
- The concept of closed seasons
- The importance of keeping informed about changes to Fisheries regulations
- Environmental issues that relate to fishing
- Ethics related to the preservation of fish stocks and their habitats
- Safety issues when fishing

Equipment and Resources

Student workbooks, copies of the current Victorian Recreational Fishing Guide, stickers associated with the National Junior Fishing Codes (if available), and Junior Recreational Fishing Passports.

Description

This suggested second session should be delivered primarily by the supervising teacher, with any volunteers that attend playing a supportive role. Any or all of the following activities should be undertaken.

A. Fish Identification Activity

Students will work in pairs using the Victorian Recreational Fishing Guide to complete a puzzle relating to common recreational fish species, minimum size limits, and catch limits. Completion of the activity will reveal a phrase that is associated with the National Junior Fishing Codes (Details Below).

B. Fishing Safely Crossword

The class of students should be asked to read through the Fishing Safely section in their Student Workbooks (as a group reading exercise). Students should then be able to complete the Fishing Safety Crossword.

C. National Junior Fishing Codes

Students should each be given one of the six stickers that represent the National Junior Fishing Codes. Students with the same sticker will then form a group so that the class will be divided into six groups. The groups of students will then discuss what the message on the sticker may actually mean and write down their ideas on a large piece of paper. One student can be designated as the scribe, and another student in the group will be chosen as a reporter. Once the students have listed their ideas, the whole group will be brought back together and each student will receive a copy of the Junior Recreational Fishing Passport. The reporters from each group will then communicate their ideas as we work through the passports and examine the six codes in total.

D. Fishing Excursion Discussion

Relevant pages in the Student Workbook such as "How Do I Know if I Have a Bite" and "Catch and Release Fishing" can be discussed with the students. Sections of the "School Fishing Excursion Record" page should be filled in (date, location, type of waterway, fish species present, bait/s used, type of rig/s used etc.). Students should also be given an opportunity to ask any general questions about the fishing excursion.

Session Three - Almost Ready



Aim

At the end of the session students should have an increased knowledge of:

- Common baits for marine, estuarine, and freshwater fishing
- Baiting techniques
- Tying several types of common rigs, and when and where to use them
- Tips and techniques for safe and accurate casting
- The best way to carry a rod when walking
- Freeing a snagged line safely

Description:

The students should be divided into three even groups and rotated through the following three activities.

Clinic A. Advanced Casting Skills

Students should be given an opportunity to revise the casting tips and techniques that were introduced to them in the first session. Students who are beginning to cast quite competently can be shown different styles such as casting underhand, both backhand and forehand. A competition could be organised with prizes awarded for achievement, however the main objective should be to have as many students as possible casting accurately and confidently in preparation for a fishing excursion.

Equipment and Resources

5-10 rods and reels assembled with casting plugs. Sports hoops and cones (School to supply).

Reference

Student Workbook (Page 6).

Clinic B. Bait Identification Activity

This activity will involve the students examining information on a range of marine and freshwater baits and completing a matching activity, centred on pictures and

information. Some actual bait specimens may be brought to sessions in either a preserved or live state.

Discussion should revolve around where each type of bait can be obtained from, what species of fish it can be used for, and how it is best presented on a hook.

If time permits other topics that can be covered include how to hold a rod when walking, and what to do in the case of a snagged line.

Equipment and Resources

Student Workbooks, Scissors and glue-sticks (School to supply).

Reference

Student Workbook (Pages 12, 13, 23, 7).

Clinic C. Common Rigs For Common Species

Students will be shown several different fishing rigs and then be given an opportunity to practise tying these rigs for themselves. Preference will be given to the types of rigs that will be of greatest use in the local waterways surrounding the school.

One or more of the following rigs should be demonstrated.

1. Running sinker rig
2. Single and/or double hook paternoster
3. Quill float and/or bob float rig
4. Bubble float rig

Instructional diagrams in the student booklets should be utilised during this workshop.

Equipment and Resources

10 Mini-Tackle boxes (each containing 2 hooks, a swivel, a three-way swivel, a ball sinker, and a small bomb or teardrop sinker), fishing line, 10 pairs of scissors (School to supply). (Optional: quill, bubble or bob floats).

Reference

Student Workbook (Pages 14-17).

Session Four - Let's Go



Aim

At the end of the session students should have real experience at fishing a local waterway, with knowledge of the fish species present, and the most appropriate baits and techniques for catching these fish.

Equipment

Each student should be supplied with a rod and reel, and a rod holder on site. Volunteer presenters will require a suitable terminal tackle (hooks, swivels, sinkers, floats etc.) as well as sufficient bait, and any other items or accessories deemed necessary.

Description

This final two-hour session can be extended into a half-day excursion if the school chooses to. A number of volunteers should be present on this day with the aim of having a ratio of five students to each adult. Volunteers should be organised at least a week before the excursion.

It is generally preferable to have fishing equipment set up and ready to go when the students arrive so that they can maximise their actual fishing time. Students should be encouraged to do as much for themselves as possible, including casting and putting on their own bait. However students should not be forced to do something against their own will, and assistance should be offered in all areas if required. Students should be instructed on how to release undersized and unwanted fish correctly, with the possibility of tagging fish in accordance with the VICTAG Program if this is applicable.

School Requirements:

It will be the responsibility of the school to organise parental permission forms for this final session, and to organise the transportation of the students to and from the selected location. One or more staff members involved in the teaching of the students will need to be present, and any parent volunteers with experience in fishing would be welcome. Students will need to bring their own lunch and drinks if required, as well as suitable clothing relating to the predicted weather conditions, eg. hats, raincoats, etc. The school will also need to supply a first aid kit. It is also strongly advised that students wear their own sunglasses to protect their eyes from a possible errant hook.

Venue Selection:

The following criteria will be used when selecting a fishing venue for the school.

1. The proximity of the waterway to the school, and available methods of transport
2. Fish stocks present and the likelihood of students successfully catching fish
3. The presence of amenities such as toilets
4. The availability of shade or shelter in inclement weather conditions
5. The safety of the environment to junior fishers

Consultation with the school should be included in the venue selection process.



Equipment Checklist

Session One

- Student workbooks
- Rope and/or cord, fishing line, large example hooks, medium sized hooks (barbs and points removed), swivels, line clippers
- 10 reels (with line) , 10 rods (not assembled), 10 casting plugs
- 5-10 rods and reels assembled with casting plugs
- School to supply: 10 Sports hoops and cones, scissors

Session Two

- Student workbooks
- 30 Victorian Recreational Fishing Guides
- 30 Junior Recreational Fishing Passports (Optional)
- 30 stickers (5x each of the 6 junior codes)

Session Three

- Student workbooks
- 5/10 rods and reels assembled with casting plugs
- 10 mini-tackle kits (each containing 2 hooks, a swivel, a three-way swivel, a ball sinker, and a small bomb or teardrop sinker), and fishing line
- A selection of quill, bubble and bob floats (Optional)
- School to supply: 10 Sports hoops and cones, scissors and glue-sticks

Session Four

- Rods, reels, rod holders
- Trace line, swivels, hooks, sinkers, floats, tackle boxes
- Appropriate bait, containers, esky
- Weighing scales, rulers, plastic bags
- Tagging equipment (if appropriate)
- Knives or scissors (presenter use only)

Tackle Tip: King George Whiting

A very popular fish that is found in ocean waters, bays and larger estuaries. A bottom feeding fish that puts up a great fight for its size.

Tackle: Light to medium line. Running sinker rig with minimal weight.
Longshank hook in sizes 4-8.

Baits: Pipi, mussel, sandworms, small pieces of squid.

Tips: Fish in areas with a sand bottom, especially if there are patches of weed nearby. Slowly retrieving a bait, and dragging it along the bottom can be successful.



Appendix 1: Fish Identification Activity



Aim

At the end of this activity students will have an increased knowledge of:

- The fish species most commonly caught by recreational anglers
- Some of the identifying features of these fish
- The concept of minimum legal size limits which apply to these fish species
- The concept of bag/possession limits

Resources

Students need to refer to the Victorian Recreational Fishing Guide published by the Department of Primary Industries.

Hidden Words

Completion of the puzzle will reveal a phrase that is associated with the *Get Hooked... It's Fun to Fish* National Junior Fishing Codes, when reading downwards.

Ideas for Discussion

During or after the activity, the following points and issues could be discussed:

- **The origin of the common names for the various species of fish.** For example, many of the fish were named after similar fish found in and around the waters of the British Isles, ie. Cod, bream, perch, whiting. Other fish gained their name from their particular appearance, ie. Elephant fish, flathead, bluetthroat wrasse, catfish.
- **How the minimum size limit for different species of fish was decided.** The scientific basis behind size limits is based upon the concept that fish should be able to grow to a size whereby they can reproduce once, before they can be legally caught.
- **The difference between bag limits and possession limits, and why it may be necessary to have these restrictions on certain species.** Bag limit refers to the maximum number of a particular type of fish that a person may take on any one day. Possession limit refers to the maximum number of a particular type of fish that you may possess at any time, in, on or next to a waterway, regardless of the number of days over which the fish were caught. These restrictions were put in place to prevent anglers from overfishing, and to discourage the possibility of catching large numbers of fish that can then be sold commercially.
- **Closed seasons and the reason for them.** Some species of fish can only be caught at certain times of the year. This is to protect them during spawning when they may be more vulnerable to capture.
- **The difference between introduced and native fish species.** For example in freshwater systems we have introduced fish such as redfin, carp and trout, and native fish such as Murray cod and golden perch.
- **The definition of marine, estuarine and freshwater species.**

Fish Identification Activity



1. A common marine fish with a minimum legal size of 25cm. -----
2. A fish with a strange nose. You can only catch and keep three. -----
3. A type of cod that you cannot keep if you catch it. -----
4. A flat-bodied fish with a minimum legal size of 23cm. -----
5. A trout with a spotted tail and a coloured stripe on its body. -----

6. A fish with a minimum legal length of 23cm. Also called a skipjack. -----
7. A marine fish with no minimum size, but a bag limit of 20. -----
8. A marine fish with a minimum legal size of 23cm. -----

9. A long fish with a bag/possession limit of 10. -----
10. A fish with black stripes and a minimum legal size of 22cm. -----
11. A type of wrasse with a minimum legal size of 28cm. -----
12. A type of mollusc with a bag limit of 10. -----
13. A type of freshwater salmon. -----
14. A type of perch with a minimum legal size of 30cm. -----

15. A mollusc with two types: blacklip and greenlip. -----
16. A crimson-red coloured fish with a minimum legal size of 27cm. -----
17. A marine fish with a minimum legal size of 36cm. -----
18. A type of perch with a minimum legal size of 25cm. -----

19. A crustacean with a bag/possession limit of 30 (Sand). -----
20. An estuarine fish with a minimum legal size of 26 cm. -----
21. A mollusc with a bag/possession limit of 100. -----
22. A freshwater fish with a minimum legal size of 22cm. -----

Answers



- | | | |
|--------------|-----------------|---------------|
| 1. FLATHEAD | 9. EEL | 15. ABALONE |
| 2. ELEPHANT | 10. LUDERICK | 16. SNAPPER |
| 3. TROUT | 11. BLUE THROAT | 17. PIKE |
| 4. FLOUNDER | 12. OCTOPUS | 18. ESTUARY |
| 5. RAINBOW | 13. ATLANTIC | |
| | 14. GOLDEN | 19. CRAB |
| 6. TAILOR | | 20. BREAM |
| 7. WAREHOUSE | | 21. SCALLOP |
| 8. SWEEP | | 22. BLACKFISH |

The phrase spelt out reading downwards is associated with the National Junior Fishing Codes. The other five codes are:

- Take Only What You Need
- Fish With Friends
- Don't Leave your Tackle Behind
- You're The Solution To Water Pollution
- Quality Catchments Equals Quality Fish

The National Junior Fishing Codes Education Kit consists of a series of six 45-minute classroom sessions (one relating to each code), developed by Fisheries Victoria with support from the Natural Heritage Trust. The Education Kit is designed to be delivered by primary school teachers and may be downloaded from the DPI internet site www.dpi.vic.gov.au/fishing

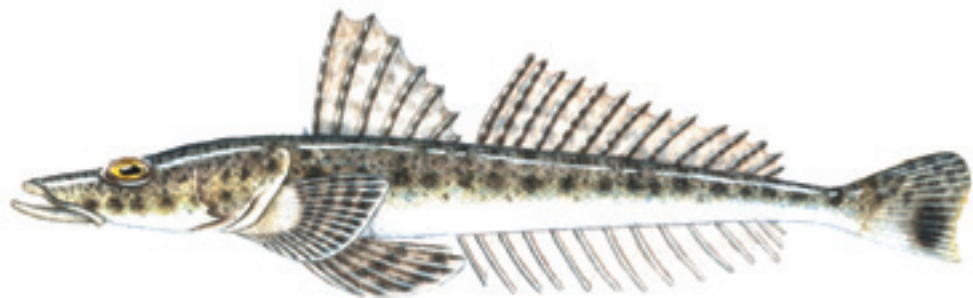
Tackle Tip: Flathead

A very common and often easily caught fish, that is found in marine waters, bays and estuaries. Various different species can be found in both shallow and deep water.

Tackle: Medium hooks in sizes 2-2/0. Can be caught on running sinker or paternoster rigs.

Bait: Pilchards, whitebait, pipi, mussels, squid, bass yabbies.

Tips: Can be caught off piers, banks and beaches. Respond well to baits that are moved slowly along the bottom. Drifting in a boat can be very productive.



Appendix 2: Fishing Safely Crossword

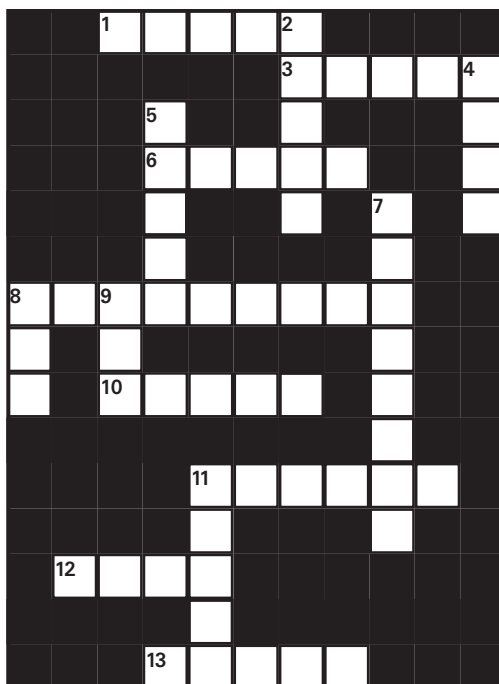


Across

- When fishing along open coastlines always keep an eye on, and never turn your back to the _____.
- Always be careful with _____. They are sharp and can easily penetrate the skin and cause injury.
- It is a good idea to record all of your fishing trips in a _____. This will help you decide when it is the best and safest time to go fishing.
- Always wear a PFD (Personal _____ Device) when you are in a boat.
- _____ handle or touch a fish or animal that you cannot recognise.
- Never wear _____ when you are in a boat.
- Always be very careful when you are on the banks of deep or _____ flowing rivers.
- Be careful when you handle all species of fish. Even common fish such as flathead or _____ can inflict painful wounds with their spines.

Down

- Be careful with _____ fishing knives. Many injuries are caused to anglers when attempting to clean and fillet fish.
- Because you are always near the water when you are fishing, it is a good idea to learn to _____.
- Whenever possible go fishing with an _____. This will make the fishing trip safer, and you will probably learn a lot more about fishing from them.
- Whenever you go fishing during the warmer times of the year, make sure that you are _____. This means wearing a hat, a long-sleeve shirt, using sunscreen, and making use of available shade.
- The dorsal or top _____ of many fish have sharp spines. Always handle them with care, and try to get an experienced angler to show you the safest way to handle them.
- Never go fishing on your _____.
- _____ can be your best friend or your worst enemy. Always treat it with the respect that it deserves.



Answers

Across

- Waves
- Hooks
- Diary
- Flotation
- Never
- Waders
- Fast
- Bream

Down

- Sharp
- Swim
- Adult
- Sunsmart
- Fin
- Own
- Water



Appendix 3: Bait Bucket - Saltwater Fishing



Pilchards

Use For: Snapper, Flathead, Salmon

Hooks. Size 1/0 - 4/0

Method: Can be used as a whole bait, cut in pieces.
half, or in pieces.



Whitebait

Use For: Snapper, Flathead, Salmon

Hooks: Size 2 - 2/0

Method: Can be used whole or cut into



Pipi

Use For: Whiting, Mullet, Salmon

Hooks: Size 2 - 8 Long shank

Method: Use whole and thread onto the hook
Cut into very small pieces for garfish.



Mussel

Use For: Whiting, Flathead, Bream

Hooks: Size 8 - 1/0 Long shank

Method: Use whole and thread onto the hook.



Bass Yabbies

Use For: Bream, Flathead

Hooks: Size 4 - 6 Baitholders

Method: Use live and hook through
the tail and body.



Sandworms

Use For: Bream, Mullet, Whiting

Hooks: Size 6 - 10 Baitholders

Method: Thread onto the hook lengthways.

Other Baits

Several other baits can be used in saltwater. Dough mixtures and small pieces of raw chicken fillet can be used to catch mullet, garfish, trevally and other fish in estuaries and marine waters.



Bait Bucket - Freshwater Fishing



Scrubworms, Earthworms

Use For: Trout, Redfin, Golden Perch

Hooks. Size 2 - 6 Baitholders

Method: Use live and whole. Best fished on the bottom.



Mudeyes

Use For: Trout

Hooks: Size 8 - 10 small fine hooks

Method: Use live. Hook through the wings. Fish under a bubble float.



Yabbies

Use For: Redfin, Golden Perch, Murray Cod

Hooks. Size 4 - 2/0 Wide gap hooks

Method: Use live, hook through the tail, and fish on the bottom.



Maggots (Gents)

Use For: Trout, Mullet, Bream, Carp

Hooks: Size 8 - 14 small fine hooks

Method: Use live. Hook one or more through the tail, and fish under a float, or on the bottom.



Minnows

Use For: Trout, Redfin

Hooks. Size 6 - 10 small short hooks

Method: Use live and whole. Fish under a float or on the bottom.



Shrimps

Use For: Trout, redfin, bream

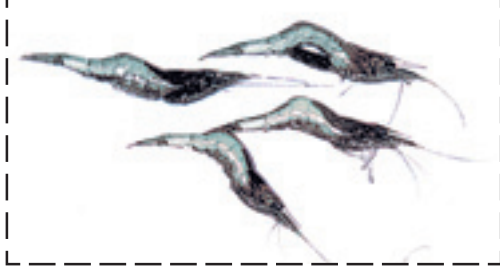
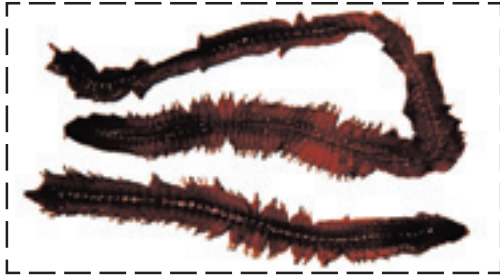
Hooks: Size 4 - 8 small fine hooks

Method: Thread one or more onto the hook. Bottom or float fishing.

Other Baits

Corn kernels (from a can), bread and bread crusts, and various mixtures of raw dough with added ingredients to provide smell and flavour, can all be used to catch fish such as carp, roach, and tench.

Bait Bucket - Samples for Copying





For the Teacher

Appendix 4: VICTAG

The VICTAG program commenced in 1994, as a result of cooperation between the Victorian branch of the Australian National Sportsfishing Association, Fisheries Victoria, and the Marine and Freshwater Resources Institute. Since the beginning many thousands of fish have been caught, tagged, and released by anglers taking part in the program. Some of these fish are recaptured at a later date and provide valuable information on the growth, movement and distribution of different species.

By March 2004 more than 400 anglers have been actively involved in the tagging program, and over 50,000 fish have been tagged during this period. One individual angler has caught, tagged and released over 3000 fish on his own. To this date more than 1300 tagged fish have been recaptured.

If you or a person that you are fishing with recaptures a tagged fish, you need to do the following:

1. Record the **tag code**, as well as the **type** and **size** of the fish. The size can be recorded as a **total length**, or the **whole weight** of the fish.
2. Call **1800 652 598** or **1800 677 620** and report the details on the answering machine, along with your name, address and phone number.
3. Your call will be returned, and a **letter** and a **certificate** will be sent to you, which will provide details of the growth and movement of the fish.

*The recapture information for marine fish displayed in the following tables has been obtained from the VICTAG Coordinator, Mr Adrian Arkinstall, and from the 'ViCTAG News' information bulletins. Recapture information for freshwater fish, was made available by the Marine and Freshwater Resources Institute, Snob's Creek.

Tackle Tip: Silver Trevally

A hard fighting fish that can be caught in bays and estuaries, and quite often off piers and rockwalls.

Tackle: Medium strength lines and small to medium hooks. Bottom or float fishing can be used.

Baits: Pipi, mussels, bass yabbies, sandworms, whitebait, and small pieces of pilchard.

Tips: Trevally have a soft mouth from which the hook can be torn if you do not play the fish carefully.





Recapture Details

Bream

Tagged	Recaptured	Time at liberty	Growth
Spring Creek, Torquay 14 April, 2000 23cm	Anglesea River 13 September 2002 29cm	882 days	6cm
Paynesville, Gippsland August 26 th , 1996 25cm	Hollands Landing September 10 th , 2000 33.5cm	1476 days	8.5cm
Maribyrnong River 26 November 2000 21cm	Yarra River 27 February 2003 32cm	823 days (Travelled 6km)	11cm

Snapper

Tagged	Recaptured	Time at liberty	Growth
Portland Bay 13 February 1998 29cm	St Kilda (Breakwall) 18 October 2003 67cm	2073 days (Travelled 335km)	38cm
Westernport Bay, Cowes 4 March 2001 34cm	St Leonards 23 November 2003 49cm	991 days (Travelled 70km)	15cm
Port Phillip Bay- Williamstown 26 November 2002 20.8cm	Corio Bay 14 February 2003 23cm	80 days (Travelled 55km)	2.2cm

Estuary Perch

Tagged	Recaptured	Time at liberty	Growth
Tarwin River, Tarwin Lower 9 May 1999 34.2cm	Anderson Inlet 16 January 2003 36cm	1348 days (Travelled 2km)	1.8cm
Merrimans Creek, Seaspray 5 October 2003 42cm	McLaughlins Beach Inlet 1 December 2003 44.5cm	57 days (Travelled 50km)	2.5cm

Dusky Flathead

Tagged	Recaptured	Time at liberty	Growth
Lake Tyers-Mill Point 8 February 2003 47cm	Lake Tyers-Devil's Hole 28 August 2003 50cm	201 days (Travelled 11km)	3cm
Gipsy Point, Mallacoota 23 August 2001 78cm	Lower Lake, Mallacoota 16 February 2003 80cm	542 days (Travelled 14km)	2cm



Australian Salmon

Tagged	Recaptured	Time at liberty	Growth
Portland Harbour January 7 th , 1995 36cm	Dillon Bay, W.A. September 5 th , 2000 64cm	2068 days (Travelled 2,150 km)	28cm
Ricketts Point, Brighton 10 May 2003 54cm	Shallow Inlet 10 January 2004 58cm	245 days	4cm

Sharks

Tagged	Recaptured	Time at liberty	Growth
Female Shortfin Mako Cape Schanck, Vic. March 20 th , 1999 Weight ~30kg, Length 1.5 m	Cairns, QLD. October 17 th , 2000 Weight 47kg, Length 1.8m	577 days	17 kg 30cm
Gummy Shark Flinders Island, Bass Strait 23 March 2002 94cm	Kangaroo Island, SA 17 September 2002 99.2cm	178 days (Travelled 964km)	5.2cm

Golden Perch

Tagged	Recaptured	Time at liberty	Growth
Wallpolla Creek, Lybra February 27 th , 1995 40cm	Menindee Lakes Inlet July 15 th , 2000 N.A.	1965 days	N.A.
Gunbower Creek, downstream of the Koondrook Weir 42.5cm, 1.360kg	Murray River-Barham 1.700kg	~330 days	340gm

Macquarie Perch

Tagged	Recaptured	Time at liberty	Growth
Lake Dartmouth Mitta Mitta inflow 36cm, 878gm	Lake Dartmouth Eustace Bay Length N.A., 1136gm	120 days Distance: ~20km	258gm
Lake Eildon Jerusalem Creek Arm 38cm, 840gm	Lake Eildon Big River Arm Length N.A., 1200gm	Several months Distance: ~120km	360gm

Student Work Activities



Students can select one or more of the fish represented in the tables and present the tagging /recapture information in the following ways.

- Produce a drawing showing the actual size of the fish, firstly when it was tagged and secondly when it was recaptured. Research the species of fish that you have chosen so that you can draw a realistic impression, and you can also include interesting facts about it eg. maximum size, habitat and distribution, diet, angling techniques etc.
- Draw some bar graphs to represent the size of a tagged and then recaptured fish, so that the increase in size is represented in this way.
- Draw a map to show where the fish was tagged and then later recaptured, and calculate the distance that the fish travelled.
- Make an estimate of how big the fish would be now, based on the increase in size during the time at liberty, and the time that has elapsed to the present day.
- Write a creative story describing the fish's experience of being tagged and the events of its life during its time at liberty. Concentrate on the dangers and threats that the fish encountered during this period, ie. commercial and recreational fishing pressure, predators such as birds, seals and larger fish, pollution, destruction of habitats, etc.

Tackle Tip: Trout

Brown and rainbow trout are found in many freshwater lakes and rivers throughout Victoria. They can be caught by most methods including baits, lures and flies.

Tackle: Light lines of 2-3 kg are recommended. Use small hooks in sizes 8 – 12.

Bait: Mudeyes, worms, maggots, minnows, crickets, grasshoppers.

Tips: Fishing baits beneath a bubble float is very productive. If fishing on the bottom try to keep sinker weight to a minimum, or fish unweighted. Best times are early and late in the day.



Appendix 5; Fish Biology



Fish are a group of vertebrates, which means that they are animals that have a backbone. The other four groups of vertebrates in the animal kingdom are mammals, birds, reptiles and amphibians. Fish are cold-blooded, which means that unlike birds and mammals, they do not maintain a constant body temperature. This means that their body temperature varies with their surroundings. Over half of all the species of vertebrates are fish, and they come in many different shapes, sizes and colours.

Fish can be divided into two main groups. One group has a skeleton made of cartilage and are therefore called cartilaginous fish. This group includes all of the sharks and rays. All other fish have a skeleton made of bone and are therefore called bony fish.

Cartilaginous Fish

There are over 250 different species in this group and they include sharks, stingrays and skates. Almost all of the fish in this group live in marine waters.

Bony Fish

There are over 15,000 species in this group and they can be found all over the world, both in freshwater and in marine waters. The following information refers to bony fishes.

External Features of Fish

When you mention the word fish to someone, the things that immediately come to mind may be fins, scales and slime! This should not be surprising, as they are all very important adaptations to life in water.

Fins

Fins can be compared to the wings of birds in that they are used for movement. Fins are also used for balance and steering. Fins can either be paired or unpaired.

The **caudal** fin is what we normally call the tail. When used together with the muscles of the body, the caudal fin provides powerful forward movement. The other examples of unpaired fins on a fish are the **anal** fin (below), and the dorsal fin (top). The **dorsal** fin, which is used for balance, can be soft, or it can be divided into a spiny front section and a soft section at the back.

The paired fins are the **pectoral** fins, which are directly behind the **operculum** (gill covering), and the **pelvic** (or **ventral**) fins, which are underneath. These paired fins are held tight against the body when the fish is moving quickly, but are then held out and used as brakes when the fish slows down. The paired fins are also used for balance, steering, and hovering in the water.

Scales

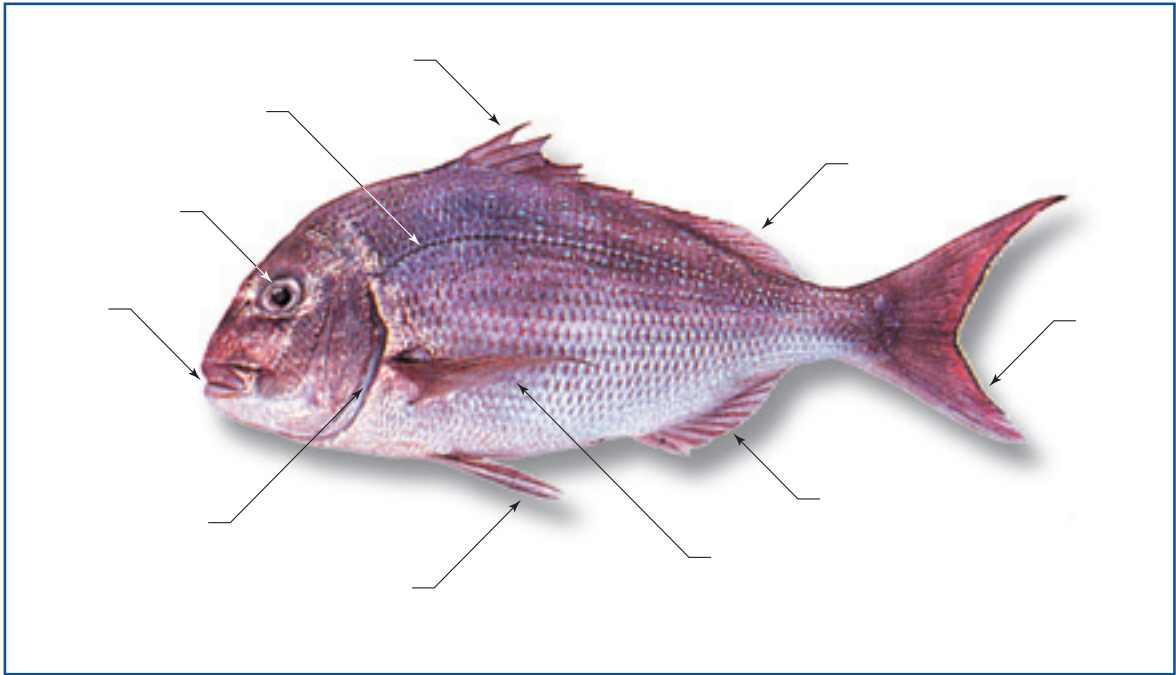
Most fish have scales covering their body. These scales vary both in shape and size, and some fish do not have any at all. The scales add to the streamlining of a fish, allowing it to glide smoothly through the water. The slime that often coats a fish's body acts as a defence against infection by bacteria.

Lateral Line

Very often it is easy to identify a line running down the length of a fish on both its sides. This is the lateral line and it enables the fish to sense vibrations in the water. This is what enables a fish to 'hear' in water.

The diagram on the following page can be photocopied and distributed to students.

Label the following diagram of a typical fish



Word list: Dorsal Fin (spiny), Dorsal Fin (soft), Caudal Fin, Pelvic Fins, Pectoral Fins, Anal Fin, Operculum, Lateral Line, Eye, Mouth.

Internal Features of Fish

Gills

Fish differ from all other vertebrates in that they are the only group with gills. Gills are the organs responsible for allowing a fish to breathe, just as lungs do for mammals.

Water passes in mainly through the mouth and over the gills, which are rich in blood vessels. Oxygen from the water passes into the blood in the gills, and carbon dioxide is released into the water at the same time.

Heart

Fish have a simple heart consisting of two chambers, compared to the four-chambered heart that humans have. This heart pumps blood around the body through a series of veins and arteries.

Swim Bladder

The swim bladder is a tough sac that can be filled with air and helps fish stay afloat at various depths in the water.

Other Organs

Other organs that can be found inside a fish include the stomach and intestines, which are related to digestion, and the pancreas, liver, spleen and kidneys. The brain is very small in relation to the size of the body.

Assignment Ideas

1. Fish Habitats

Students could research the different habitats in which fish live, and produce a poster or booklet on their findings. For example, most marine fish live mainly in one of the following environments: coral reefs, sandy bottoms, open ocean waters, rugged rocky coastlines, sheltered bays and estuaries. Students could produce a description of each habitat, describe some of the fish species that occur there, and describe how they are adapted to living there. The body-shape of different fish can be related to their habitat: eg. Ocean or pelagic fish have torpedo-shaped streamlined bodies; fish that live on sandy bottoms have flattened bodies; other fish have thin narrow bodies for hiding in rock crevices.

2. Fish Feeding Habits

Students could investigate the different diets that fish have and how their mouths and teeth are specialised for this. For example:

- Luderick are vegetarian and have fine teeth for grazing seaweed off rocks
- Tailor have razor sharp teeth so they can bite off the tails of smaller fish to immobilise them, and can then eat the rest of them later
- Pike and barracouta have very long and sharp teeth for hunting and eating smaller fish
- Snapper and bream have strong rounded teeth for crushing shellfish and crabs
- Toadfish, wrasse and leatherjackets have teeth that are fused together into a solid powerful plate for grazing on shellfish and other hard-bodied animals
- Whiting have toothless mouths designed for searching through sand for worms, shrimp and other small creatures.

3. Camouflage and Defence

Fish display many different colours, shapes, and features that are adaptations for survival. Students could research fish that camouflage with their environment. For example, flounder and flathead blend in with sand, and pipefish and leafy sea dragons look like seaweed.

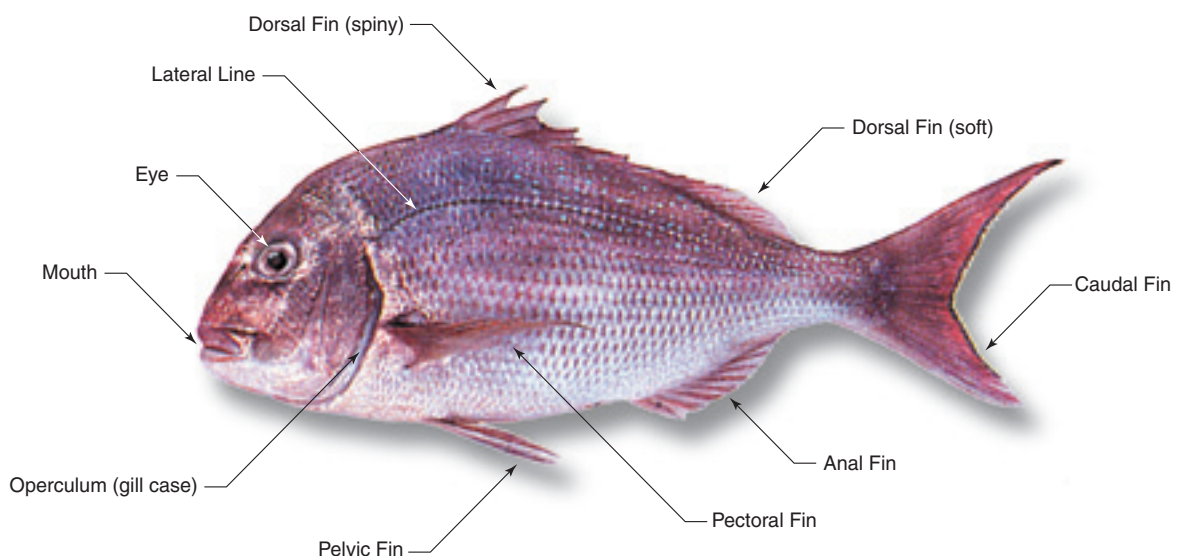
Other fish can change shape or colour for defence reasons: eg. A puffer fish can inflate itself to prevent predators from swallowing it.

4. Reproduction

Students may choose to research the topic of reproduction in fish. Many amazing facts can be uncovered in this area. For example:

- Sharks tend to give birth to live young whilst other fish lay eggs that are then fertilised and develop independently
- Some fish make nests and other fish look after their young by keeping them in the mouth of the adult
- Some fish lay thousands of eggs whilst others lay only a few
- Some fish change sex from male to female (eg. Barramundi)

Key to fish diagram



Cross-links



National Junior Fishing Codes

Schools Recreational Fishing Program

Code 1: Take Only What You Need

Catch and Release Fishing

Code 2: Fish With Friends

Fishing Safely

Code 3: You're The Solution to Water Pollution

-

Code 4: Throw the Little Ones Back

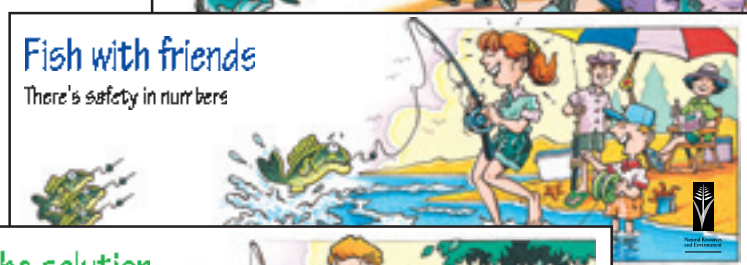
Catch and Release Fishing
Fish Identification Activity

Code 5: Don't Leave Your Tackle Behind

-

Code 6: Quality Catchments Equals Quality Fish

-



Curriculum and Standards Framework II Links



The Schools Recreational Fishing Program can be used as an introduction to, or as a tool for completing the following learning outcomes that are described in the Victorian Curriculum and Standards Framework II (Board of Studies, DEET).

Key Learning Area: Health and Physical Education

Level	Strand	Learning Outcomes
3	Health of Individuals and Populations	3.1 Explain ways in which people can improve physical and social environments or social behaviours to enhance health and safety
3	Movement and Physical Activity	3.1 Perform manipulative skills with proficiency
4	Health of Individuals and Populations	4.2 Plan and implement strategies to promote personal and environmental health and safety
4	Movement and Physical Activity	4.1 Perform motor skills proficiently in complex skill development activities

Key Learning Area: Science

Level	Strand	Learning Outcomes
3	Biological Science Living Together: past, present and future	3.1 Describe environmental factors that affect the survival of living things
3	Biological Science Structure and Function	3.2 Identify the main structural features that work together to form systems in plants and animals
4	Biological Science Living together: past, present and future	4.1 Identify relationships between living things which help them survive in their habitat
4	Biological Science Structure and Function	4.2 Describe how selected systems of plants and animals function

Key Learning Area: SOSE

Level	Strand	Learning Outcomes
3	Australia's People and Places	3.3 Compare how people use environments in Australia
4	Economy and Society	4.2 Explain how and why local rules and laws are made and changed
4	Geography	4.3 Analyse different views about the use and care of Australian places



Fishcare is a volunteer-based program that promotes sustainable recreational fishing practices and the care of our aquatic environments.

Volunteers provide educational resources and draw on their own experiences to assist fishers in 'doing the right thing'.

Assisted by Regional Facilitators, Fishcare Volunteers get involved in fishing programs for schools, the elderly and disabled groups.

They also speak to community groups, visit popular angling locations, assist with research projects and attend shows and competitions.

The Fishcare Volunteer Program has been operating in Victoria for over 7 years, with diverse groups of men and women (of all ages), interested in fish and the environment, from Portland in the west to far-east Gippsland.

For information on becoming a Fishcare member contact one of the regional Fishcare Facilitators (contact details listed inside) or visit www.fishcare.org.au

