Activity – Stage 2

Props:

NSW fish length ruler (see examples shown)

Activity

- Replace all fish
- Swap fishing rods
- Repeat baiting hook instructions
- Reset three minute timer

Variation to game: Using the NSW fish length rulers play the game, however:

- Junior Fishers will have to decide whether to keep or 'throw back' fish using the fish length rulers to measure each fish.
- Fishers will be awarded 5 points per correct fish (meaning size and catch limit) in their possession.
- Fishers will lose 5 points for each incorrect number or sized fish in their possession.

Discuss How the habitat looks after the second group of fishers have completed their allotted time catching fish.

'The great line-up game'

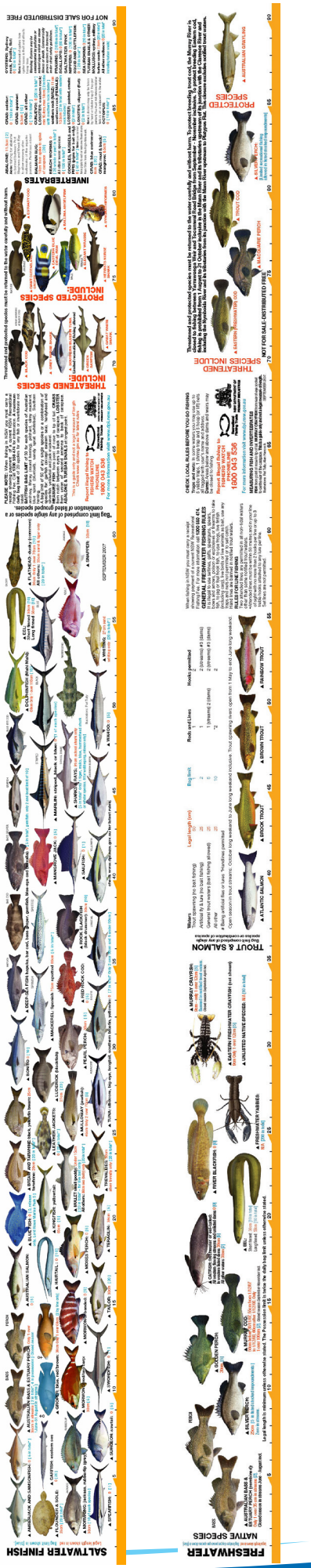
Pose a rhetorical question; '*Is a big fish necessarily always an old fish, or is a small fish always a young fish?* '

Some students may look puzzled at the question. Do not wait for an answer, but launch into game.

Activity

Arrange students in a straight line according to their exact age in years and months.

- Looking along the line, what have you discovered from lining up in this manner? (They should notice that age does not necessarily equal height, or in the case of fish, age does not necessarily equal length)
- Was the tallest child the oldest? Was the smallest child the youngest?



Discuss

Using the analogy above, expand upon the idea that not all fish that are the same size are the same age.

Therefore, a large fish does not necessarily mean it is a mature fish, and conversely a small size in some species of fish does not necessarily mean they are juvenile.

Thus, after consulting with your fish ruler, you always throw the little ones back.

'Ways to return undersize fish safely' (Fishing skills)

Props:

- Plastic fish model
- Longnose pliers
- Copy of NSW Recreational Fishing Guide
- Detergent to model sliminess of fishes body

Role-play: Choosing a willing volunteer from the group, act out the preferred method to release a fish.

Explain the following catch and release method

- With a responsible adult overseeing you, cut hook with pliers: Hook will eventually dissolve in the fish's mouth.
- Release fish with wet hands to minimise damage to scales.
- Hold fish upright in the water for several moments to rehabilitate.

Evaluation activity:

'My fishing practices'

Props:

- Wilbur the Wise Fish whiteboard
- Whiteboard textas

Using "Wilbur the Wise Fish" whiteboard, brainstorm why you should not take home every fish you catch.

Examples may include:

- too small
- unsuitable to eat
- I have more than I need
- no fish for me next time
- no fish left for my friends
- not enough fish left to breed and replace the ones taken
- problems within the food web, such as population explosions in some species and declines in other non-fish species.

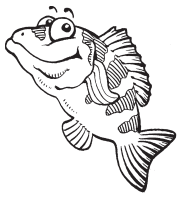
Discuss

Make students aware that NSW now have established marine protected areas along some parts of the coastline. Aquatic reserves, intertidal protected areas and marine parks are forms of marine protected areas.

The purpose of marine protected areas is to preserve many different types of marine environments and the animals and plants that live in them. They allow fish to spawn and grow. They provide unspoilt natural sites for people to visit and offer areas for education and research.

Different marine protected areas have different recreational fishing restrictions. In some areas, you may fish with a line or spear fish and collect bait. In others you are only allowed to look and not disturb the aquatic marine life.

(refer to NSW Recreational Fishing Guide)



Suggested follow-up class activities for teachers

'Bait bags'

Props:

- Paper and textas
- Small lunch bags to represent bait bags
- Scissors and glue

Design a bait bag with a logo: 'When to set me free' (size limits concept).

Design a bait bag with the size limits on the back.

'Timelines'

Concept: Why we have different size limits for different fish.

Props:

- Department of Primary Industries charts of the Murray cod and the eastern blue groper: 'Let it go and watch it grow'
- Copy of NSW Recreational Fishing Guide

Compare and record on a 'growth' timeline the number of months or years before different species of fish are ready to reproduce and restock the colony. eg orange roughy, flathead, squid, Murray cod.

Compare this to other creatures that we also eat such as cows, pigs and sheep.

Discuss

Your perceived fairness of the legal restrictions for different fish.

'What's a small fish?' Wall chart

Concept: Size is not necessarily equivalent to species age.

Props:

- Department of Primary Industries charts of the Murray cod and the eastern blue groper: 'Let it go and watch it grow'
- Copy of NSW Recreational Fishing Guide
- A set of photos depicting enlarged cross-section of a fish otolith (earbone).
- 3-4 different species of juvenile and mature cardboard 'cutout fish' of various sizes, with their approximate ages written on the back of the fish.
- Blue floor mat to represent a body of water
- Small pieces of paper for size guesses, one for each student
- Large sheets of paper
- Pencils, textas and blue-tac

Activity

- Seat your group in a circle.
- Pin up the 'Let it go and watch it grow' chart onto the wall, so that all can see the fish graphic clearly.
- Pose a rhetorical question/statement to the group along the lines of; "What a large fish, it must be really old…or is it?"
- Inform group; "Your challenge, is to have a really good look at this fish and write down what you believe the age of this fish to be. Round off your answer to the closest number of years of age you think this fish may be." (On the back of the poster have the age written.)
- Pass out small pieces of paper and pencils around the circle.
- Starting from a student on your immediate left or right, go around the circle asking for their 'guesses', using the following process:

If the age is for example; 12 years and the first student guesses 5 years, ask them to stand up until another student volunteers a closer guess of, for example, 8 years. The first student then sits and you repeat the process until a student guesses the actual age or after receiving answers from all in the group, the student who was closest to the actual age remains standing.

'Fishy Find-A-Word'

Complete the Find-A-Word (activity sheet)

Turn over the poster and let them read out the answer to the rest of the group. Look up your size limits in your state or territory recreational fishing guide and assess as a group:

1. Whether this large fish is a 'little one' and should be 'thrown back' or a mature fish and may be kept.
2. Approximately where this fish is in its life cycle (guessed from its actual length and compared to the size limits in your recreational fishing guide as to how long it may potentially grow under optimum conditions)
3. Suggested discussion questions: Is this fish half way through its lifecycle or fully mature?

Could it have reproduced yet?

- Repeat the game above, this time placing the water (blue plastic tablecloth in the middle of the circle) and informing the students they are fishers sitting around a sea/ocean or along the banks of a lake, 'cardboard cutout' fish are placed in the 'water'. The student who guessed the most correct answer in the first game gets to pick the next fish and rerun the game. Repeat 2-3 times, depending on interest of students.
- Make into a 'species age' wall chart, with the youngest 'cut-out' fish placed on the extreme left of the chart and the oldest fish placed on the extreme right.
- Compare and contrast the different species of fish with their size and approximate age. You should soon see that with some species, a young fish is actually a 'little one'. However with other fish, such as orange roughy, a 'little one' or a young fish is actually not all that small at all. Thus, you may be faced with the confusing scenario where some of the smaller fish may be the oldest, and some of the biggest fish may potentially be the youngest, depending on what species they are.

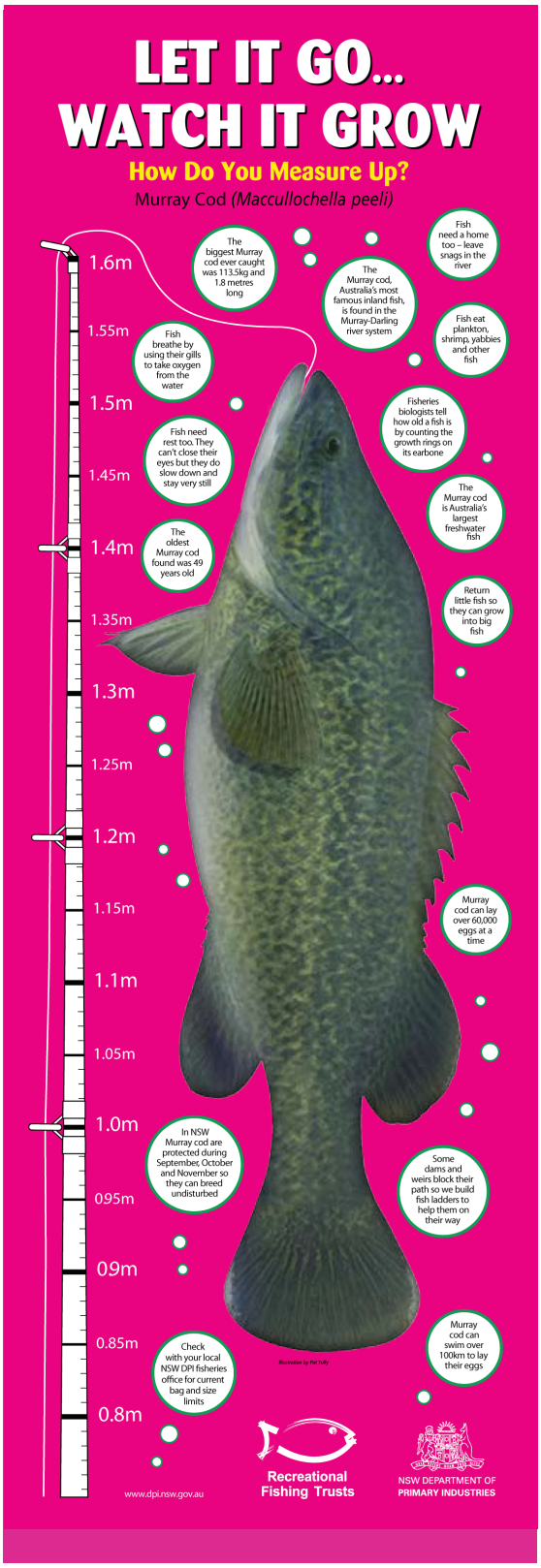
Discuss

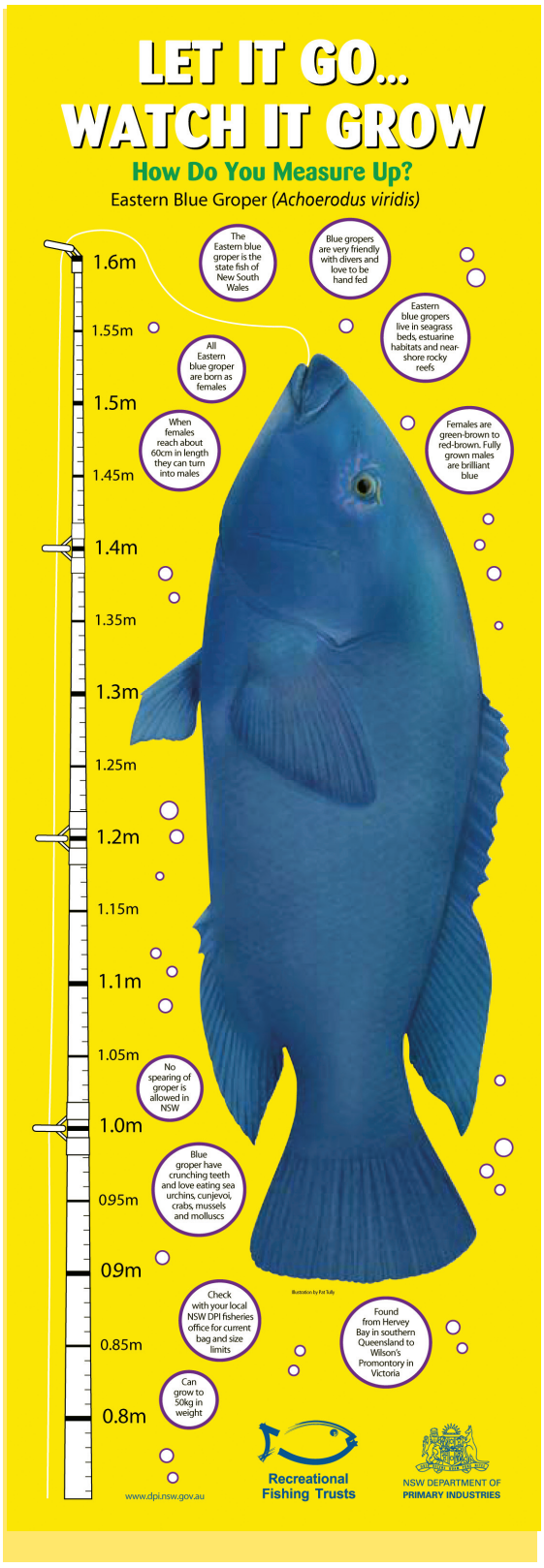
- Whether guessing if a fish is a 'little one' and should be 'thrown back' is really a good enough system for a good junior fisher.
- Why we have differing size limits for different fish.

Extension: How do fisheries managers know what size limits to set?

Pass around the 'ear bone' or 'otolith' of a fish and explain how scientists and biologists determine a fish's age from the number of growth rings in a fish's ear.

Each ring may be equivalent to a month, couple of months or years, depending on the species. Similar to the growth rings on a tree, other factors that determine the number of rings and the spacing of fluctuations in water temperature and variations in amount of available food.





A Murray Cod of this size would be between 7 and 11 years old. A Blue Groper of this size would be between 25 and 30 years old.