

Appendix I:

Glossary of terms

Abiotic: Non-Living substances such as air, light, temperature and water.

Alga, pl. Algae: Plant/s comprising the seaweeds and various freshwater plants

Algal blooms: A rapid growth of plants during often favourable growing conditions generated by unusually high nutrient levels or sunlight availability.

Aquatic: Living in or coming from water.

Bag limit: The maximum number of a particular type of fish that you may take on any one day. Refer to your local state fishing guide.

Benthos: Plants and animals that live on or in the sea bed or are attached to the substrate

Biomagnification: Build-up of contaminants in organisms in successfully higher trophic levels.

Biota: The animal and plant life of a region

Biotic: Living Organisms, including both plants and animal life.

Bycatch: Species taken incidentally when another species was the target fish.

Catchment: An area of land where all water eventually drains to one point. Creeks, rivers, wetlands, etc, receive water from this large area where the rain actually falls.

Degradation: A decline in quality.

Diversity: This is a term that emphasizes the inter-relatedness of the variety of all life forms: the different plants, animals and microorganisms and their environment

Erosion: The physical dislocation and removal of soil components by water.

Estuaries: The areas of inlets or mouths of rivers which are influenced by the tides and where fresh and salt waters mix.

Ecosystem: The physical and chemical environment of a community of living organisms and all the interactions among those organisms and their environment.

Endangered species: A plant, animal or microorganism that is in immediate danger of biological extinction (see threatened species).

Endemic vegetation: Native species confined to a given region. (eg a species endemic to Mallee areas that is not found anywhere else).

Eutrophication: Increase in the nutrient level of the water body, and consequently the rapid growth of plants. Excessive plant production may deplete oxygen and suffocate animals.

Fish: Under the *NSW Fisheries Management Act 1994*, fish means marine, estuarine, or freshwater fish or other aquatic animal life at any stage of their life history (whether alive or dead). Fish also includes oysters and other aquatic molluscs, crustaceans, echinoderms, beachworms, and other aquatic polychaetes. Fish does not include whales, mammals, reptiles, birds, amphibians or other things excluded from the definition by the Fisheries regulations

Fisher: A person who fishes.

Food chain: A specific nutrient and energy pathway in ecosystems beginning from producer to consumer organisms.

Food webs: Trace the various complex feeding interrelationships in a community.

Ghost nets: Damaged/abandoned fishing gears (e.g. nets) which continue to trap fish and other aquatic life.

Habitat: Often refers to the specific 'home' or geographic area inhabited by the living organism, in which they live, eat and breed.

Intertidal: Between the high and low water marks in a coastal zone.

Invertebrates: Animals without internal skeletal structure. (or without a backbone)

Monitoring: Routine counting, testing or measuring of the environmental factors or biota to determine their status or condition.

Nutrients: Elements or compounds essential as raw materials for organic growth.



Riparian land: Any land which adjoins or directly influences a body of water. It includes:

- the land immediately alongside small creeks and rivers
- gullies and dips which sometimes run with surface water
- areas surrounding lakes
- wetlands on river flood-plains which interact with the river in times of flood

It is important not to think of riparian land as a narrow strip along each riverbank.

Depending in the nature of the land, it can range from very narrow, through to a wide, densely vegetated corridor.

Riparian vegetation: Vegetation belonging to the bank of a creek or river or wetland, which helps support the soil so that it does not collapse.

pH: A measure of acidity or alkalinity.

Pollution: The introduction by man, directly or indirectly, of substances or energy into the aquatic environment, which results in harming living resources and aquatic life, can be hazardous to human health, hinder activities such as fishing and other water uses, or impair the quality of the water.

Salinity: The amount of salt in the water

Season: A closed season is a period during which you must not take, attempt to take or possess a particular species. Species with a closed season may only be fished during their open season.

Sediment: Soil particles, sand and other mineral or organic matter eroded from the land and carried in the water.

Sedges: Grass-like plants, which grow in shallow water (as do reeds and rushes)

Species: A group of plants, animals or microorganisms that have a high degree of similarity and generally can interbreed only among themselves.

Siltation: Sediments deposited by water in channels, harbours, etc.

Stormwater: Water that carries wastes from homes, businesses, and industries; a mixture of dissolved or suspended solids.

Subtidal: Below the low water mark.

Sustainable management: An integrated and sequenced approach of the type and intensity of land and water use to ensure that productivity can be maintained in perpetuity

Threatened species: Plant, animal or microorganisms which may be common in parts of their range, but are severely depleted in others.

Trophic: Relating to the processes of energy and nutrient transfer from one or more organisms to another in an ecosystem

Turbidity: The cloudy conditions caused by suspended solids in the water.

Waterway: A river, creek, stream, watercourse or water body in conjunction with the land immediately adjacent to it

Wetlands: Wetlands can be broadly defined as areas featuring permanent or temporary shallow open water, including which does not exceed a depth of six metres at low tide²¹. This includes billabongs, marshes, swamps, lakes, mudflats, mangrove forests and virtually any land which is regularly or intermittently inundated with water that is static or flowing, fresh, brackish, or salt.

Note: Many definitions in the Glossary of terms are quoted directly from:

NSW Fisheries Management Act 1994

NSW Recreation Freshwater and Saltwater Fishing Guide 2006-2007. NSW DPI,

Victorian Recreational Fishing Guide, 1999-2000, NRE.

Land & Water Resources Riparian Management. Booklets 1-6. Land and Water Research and Development Corporation, ACT, 1996.

Longmore, Sue & O'Callaghan, Patrick., Swan Bay Catchment Awareness Project. Schools Education Kit.

Tsernjavski, Nancy., A.B.Sea. A Cross Curriculum Marine Studies Guide from Prep – Year 12 Victorian

Institute of Marine Sciences Education Division, Warrawee Publications

Zann, Leon, P., Major Findings of the State of the Marine Environment Report for Australia.

Ocean Rescue 2000. Dept. of the Environment, Sport and Territories, Canberra, 1995.

²¹ Sourced Ramsar Convention, Wetlands are Important Paper



Appendix 2

Syllabus Learning Outcomes

Syllabus Outcomes for NSW Primary Schools in:

- Human Society and Its Environment
- Personal Development, Health and Physical Education
- English
- Mathematics
- Creative Arts
- Science and Technology

The Board of Studies NSW was established in 1990 to serve government and non-government schools in the development of school education for Years K -12. It provides educational leadership by developing quality curriculum and awarding the secondary school credentials, the School Certificate and the Higher School Certificate. The Board of Studies specifies that its syllabuses and other materials should incorporate aims, objectives, outcomes, content, teaching, learning and assessment strategies that, among other things, appreciate the complexity and fragility of the Australian and global biophysical environment and encourage rational, informed and sensitive consideration of its use.

This kit supports the achievement of that goal. In particular, it supports the achievement of a number of specific objectives and outcomes from the following syllabuses.

Human Society and Its Environment

The kit supports the achievement of several syllabus outcomes relating to:

- the Environments content strand (Years 2 and 3), which is one of the four content strands of the syllabus
- the Acquiring Information, Inquiry Process and Social and Civic Participation learning processes, all learning processes of the syllabus
- values and attitudes.

Environments

(Years 3 and 4 Outcomes)

The student:

- describes places in the local area and other parts of Australia and explains their significance (ENS 2.5)

- describes people's interactions with environments and identifies responsible ways of interacting with environments. (ENS 2.6)

Acquiring Information

(Years K - 6 Outcomes)

Students develop skills which enable them to:

- locate information using reference and information skills
- consider the usefulness, accuracy, reliability and validity of information.

Inquiry Process

(Years K - 6 Outcomes)

Students develop skills which enable them to:

- initiate investigations by defining the purposes of the investigation, posing questions about the investigation and planning the investigation
- analyse, organise and store information through a variety of methods
- synthesise and communicate information gained.

Social and Civic Participation

(Years K - 6 Outcomes)

Students develop skills which enable them to:

- keep informed about current and relevant social and environmental issues
- reflect on the impact of particular decisions and actions.

Values and Attitudes

(Years K – 6 Outcomes)

Students develop values and attitudes which support ecological sustainability:

- appreciating the environment, one's personal relationship with it and one's responsibility for its future
- recognising the interdependence of people and the environment
- showing commitment to ecologically sustainable development and lifestyles
- being environmentally responsible.

From Human Society and Its Environment K-6 Syllabus © Board of Studies NSW, 1998



Personal Development, Health and Physical Education

The kit supports the achievement of several syllabus outcomes relating to:

- the Safe Living content strand (Years 3 – 6), which is one of the eight content strands of the syllabus
- the Communication, decision making and Interacting skills, which are two of the five skills areas of the syllabus
- values 3 and attitudes.

Safe Living

(Years 3 and 4 Outcomes)

- The student discusses how safe practices promote personal wellbeing. (SLS 2.13)

(Years 5 and 6 Outcomes)

- The student describes safe practices that are appropriate to a range of situations and environments. (SLS 3.13)

Communication

(Years 3 and 4 Outcomes)

- The student uses a variety of ways to communicate with and within groups. (COS 2.1)

(Years 5 and 6 Outcomes)

- The student communicates confidently in a variety of situations. (COS 3.1)

Interacting

(Years 3 and 4 Outcomes)

- The student makes positive contributions in group activities. (INS 2.3)

(Years 5 and 6 Outcomes)

- The student acts in ways that enhance the contribution of self and others in a range of cooperative situations. (INS 3.3)

Decision-making

- The student makes decisions as an individual and as a group member. (DMS2.2)

(Years 3 and 4 Outcomes)

- The student makes informed decisions and accepts responsibility for consequences. (DMS3.2)

Values and Attitudes

(Years K - 6 Outcomes)

- The student respects the right of others to hold different values and attitudes from their own. (V2)

From Personal Development, Health and Physical Education K-6 Syllabus © Board of Studies NSW, 1999.

Science and Technology

The kit supports the achievement of several syllabus outcomes relating to:

- the Living Things content strand (Years 3 - 6), which is one of the six content strands of the syllabus
- the Investigating and Designing and Making learning processes, which are two three learning processes of the syllabus
- values and attitudes.

Living Things

(Years 3 and 4 Outcomes)

- The student identifies and describes the structure and function of living things and ways in which living things interact with other living things and their environment. (LT S2.3)

(Years 5 and 6 Outcomes)

- The student identifies, describes and evaluates the interactions between living things and their effects on the environment. (LT S3.3)

Investigating

(Years 3 and 4 Outcomes)

- The student conducts investigations by observing, questioning, predicting, testing, collecting, recording and analysing data, and drawing conclusions. (INV S2.7)

(Years 5 and 6 Outcomes)

- The student conducts their own investigations and makes judgements based on the results of observing, questioning, planning, predicting, testing, collecting, recording and analysing data, and drawing conclusions. (INV S3.7)

Design and Marketing

(Years 3 and 4 Outcomes)

- The student develops, implements and evaluates ideas using drawings, models and prototypes at appropriate stages of the design process. (DM S2.8)

(Years 5 and 6 Outcomes)

- The student develops and resolves a design task by planning, implementing, managing and evaluating design processes. (DM S3.8)

Values and Attitudes

(Years K - 6 Outcomes)

The student:

- shows informed commitment to improving the quality of society and the environment through science and technology activities. (VA6)
- appreciates contributions made by individuals, groups, cultures and communities to scientific and technological understanding. (VA7)

From Science and Technology K-6 Outcomes and Indicators © Board of Studies NSW, 2000.

English

This kit supports the achievement of several syllabus outcomes relating to:

- The Talking and Listening strand (Years 3-6) which is one of three content strands of the syllabus/ Skills and Strategies

Talking and Listening/Skills and strategies

(Years 3 and 4 Outcomes)

- Interacts effectively in groups and pairs, adopting a range of roles, uses a variety of media and uses various listening strategies for different situations. (TS2.2)

(Years 5 and 6 Outcomes)

- Interacts productively and with autonomy in pairs and groups of various sizes and composition, uses effective oral presentation skills and strategies and listens attentively. (TS3.2)

From English Syllabus K-6 © Board of Studies NSW 2007

Mathematics

This kit supports the achievement of the following syllabus outcome relating to:

- The Measurement strand which is one of six content strands of the syllabus

Measurement / Length

(Years 3 and 4 Outcomes)

- The student estimates, measures, compares and records lengths, distances and perimeters in metres, centimetres and millimetres. (MS2.1)

(Years 5 and 6 Outcomes)

- The student selects and uses the appropriate unit and device to measure lengths, distances and perimeters. (MS3.1)

From Mathematics Syllabus K-6 © Board of Studies NSW 2007

Creative Arts

This kit supports the achievement of the following syllabus outcome relating to:

- The Visual Arts strand which is one of three content strands in the syllabus

Visual Arts / Making

(Years 3 and 4 Outcomes)

- The student uses the forms to suggest the qualities of subject matter. (VAS2.2)

(Years 5 and 6 Outcomes)

- Makes artworks for different audiences, assembling materials in a variety of ways. (VAS3.2)

From Creative Arts Syllabus K-6 © Board of Studies NSW 2007

Links to Environment Education Policy for Schools

The adoption of NSW Department of Education and Training's Environmental Education Policy for Schools is mandatory for all government schools from Kindergarten to Year 12.

The Environmental Education Policy for Schools aims to foster students understanding of the achievement of ecologically sustainable development.

Get Hooked...It's fun to fish supports the policy by promoting the conservation of aquatic resources.

The policy encourages schools to access special external programs such as *Get Hooked...It's fun to fish*. The kit supports the achievement of several curriculum objectives, namely:

Students will develop:

Knowledge and understanding about:

- The nature and function of ecosystem and how they interrelate (K1)
- The impact of people and their environment (K2)
- The role of the community, politics and market forces in environmental decision-making (K3)

Skills in:

Knowledge and understanding about:

- Identifying and assessing environmental problems (S2)
- Adopting behaviours and practices that protect the environments (S6)
- Evaluating the success of their actions (S6)

Values and attitudes relating to:

- A commitment to act for the environment by supporting long-term solutions to environmental problems (V3)

For more information refer to the Environmental Education Policy for Schools.



Appendix 3:

Keys to successful presentations

Setting the scene

The following suggestions may help your session run with ease and promote your groups sense of anticipation, involvement and understanding of the fisheries junior code you are presenting.

This list is not intended to be prescriptive, it is merely a guide, there are many differing types of presenters, who can entertain and enlighten an audience using varying styles.

1. The presenter ²²

The presenter is the critical link between the students and the fisheries education kit. It is the presenters role to help create fisheries awareness and promote appreciation and understanding about our waterways.

A skilled presenter may have all, or some of the following qualities

- Communicates well, using clear and easily understood language
- Is warm and friendly and responds to the audience's interest, concerns and questions
- Cares about the audience, their feelings and well being
- Talks with, rather than at the group
- Shows enthusiasm and attempts to make the audience also feel enthusiastic
- Provokes the audiences' natural curiosity
- Is honest about the knowledge of the subject
- Understands and personalises the topic; relating what students are learning back to their everyday lives
- Maintains enough flexibility to cope when something unexpected happens
- Maintains a sense of humour and perspective, especially when things go wrong
- Gives the audience time to digest information.

Know your subject

Even if you know your subject you need to prepare properly to give a good talk. This will involve undertaking background reading and research so you can talk knowledgeably about your junior code

Key messages

Your key messages are your specific learning outcomes within each code

- Keep your messages simple and try not to communicate too many messages at once.
- Repeating or referring to your key message throughout your activity will help keep you on track

Tools

- Interesting facts and stories can make your messages come alive, engage audience interest and make your session memorable
- Develop stories from facts or track down real life stories by drawing on your own experiences, by talking to locals or by reading reference books.
- Props can provide both atmosphere and engage audience interest before you even commence your session
- Specific lighting can help focus attention on a river, lake or ocean scene
- Brainstorming is used to generate a large number of responses from a group. This method has a positive feature of promoting lateral thinking as participants build on each other's ideas within a supportive environment

²²Source: Successful Interpretation

2. Getting to know your audience

Members of your audience can be quite diverse. Try to find out as much about their experiences informally before you start the session. You can achieve this by asking questions.

Asking questions is one of the best ways to involve your audience. You might try:

- open-ended questions which encourage students to provide information. "What do you like about your lake?"
- closed questions which limit responses but can still be useful " Who goes fishing with a friend?"
- probing questions which encourage people to think. "I wonder why fish like to hang around old snags?"

Be a good listener

The best communicators listen to what students are saying rather than speaking over the top of others.

Some ways to become a better listener include:

- watching for non-verbal to get a better idea of what your audience is thinking. (eg foot shuffling indicates impatience.)
- try to listen carefully when students are talking
- practicing acknowledging what students are saying, for example by nodding to show understanding and looking directly at the student talking
- trying to keep an open mind about what students are trying to tell you

Make it easy for your audience to listen to you:

- Never shout over the top of students to gain attention. Check before you start that your voice is audible at the back
- Vary your tone and volume. Dropping your voice, leaning forward and speaking softly at an appropriate time can help build suspense.
- Start when you have the groups' attention.
- Place your group in the most comfortable seating position available, while still maintaining intimacy. (eg Seated in a circle on a mat or around a prop, where all can see is often most appropriate)
- Seat your audience facing away from the sun and vary the lighting if possible to create atmosphere (e.g. use a lamp to simulate the sun or focus on a large board game).
- Try to look and speak to the whole group, not just one or two individuals.

Consider your audiences experiences and backgrounds

The way presenters unconsciously communicate may at times actively deter people from listening to what you are saying.

You could unwittingly alienate your audience by:

- using 'jargon' or words your audience may not understand

- using sexist or racist language, (this may include consistently using one sex's name to the exclusion of the other sex. e.g 'Mick the Murray Cod')
- arguing your own personal point of view
- appearing negative or uninterested with student answers

3. Group dynamics

Whenever you run your session, think carefully about your audience.

During the session, students will exhibit many types of behaviour. Teachers should be aware that your role is as the presenter of the session and that classroom teachers are ultimately responsible for student behaviour.

Presenters need to work out strategies to manage groups. Techniques vary with the group.

- Involve your audience as much as possible, through asking questions, mime, role play and discovery based activities.
- Face your audience, not the whiteboard.
- Be flexible, if your audience seems to want more or less information, adapt your session to suit.
- Be prepared to answer questions throughout the session.
- Never be confrontational.

4. Know your venue ²³

- Make sure the venue can accommodate your planned activity and audience
- Check beforehand that you can set up the room properly and rearrange seating, desks and equipment if necessary.
- If outside, make alternative arrangements in case it rains or proves too windy
- Think about movement around the room as the activity changes, are there obstacles in your path?

²³ Source: Successful Interpretation



Appendix 4:

Essential care considerations for field trips

Suggested code of behaviour for field trips

The aim of an environmental field trip is to gather data/information whilst keeping in mind the welfare and preservation of the species being investigated. It is important at the same time to take care not to place yourself or others in danger. Good group management during field trips is to assign each group member a task, E.g. Identifier, Recorder, Creature Carer, Releasing Officer. These tasks could be rotated during the course of the excursion.

1. Personal care.

- Dress in suitable clothing, which will ensure the natural elements (eg Sun, rain).
- Be prepared for changes in weather conditions; put a jacket in your bag.
- Always wear appropriate footwear. Dive boots, Reef sandals are best for aquatic field trips.
- Include a First Aid kit in your gear, make sure it does not need restocking.
- Be aware of the harmful animals or plants in the sampling location and the First Aid requirements to treat them.
- To avoid unnecessary bites or stings to the hands, "always keep your fingers where you can see them", no reaching into cracks or crevices to find animals.

2. Environmental care.

- Take care where you walk. To minimise the impact of your visit keep to pathways or follow animal tracks where possible.
- Animals found in water should be kept in water of the same temperature.
- Do not hold too many animals in the same container, overcrowding can cause death or injury.
- Return overturned rocks to the initial position, taking care not to crush other animals hiding under them.
- Repair any holes dug using the sand, mud or soil removed from them.
- Return organisms to their original location at the conclusion of the field trip.
- Handle animals with care and respect at all times.


1. Please note this is a guide only, DET, NSW DPI or other cooperating organisations Risk Assessment and duty of care policies must be adhered to at all times.



Appendix 5:

Example layout of 'Junior Recreational Fishing Passport'.

'Take only what I need'




Recognition of Understanding

I, _____, am a Junior Fisher who:

- catches fish for my own needs
- always returns undersized and unwanted fish to the water alive
- returns fish to the water with wet hands or a wet cloth
- where possible holds released fish upright until it has recovered enough to swim alone
- understands that catching and releasing fish helps make sure there will always be enough fish for the future

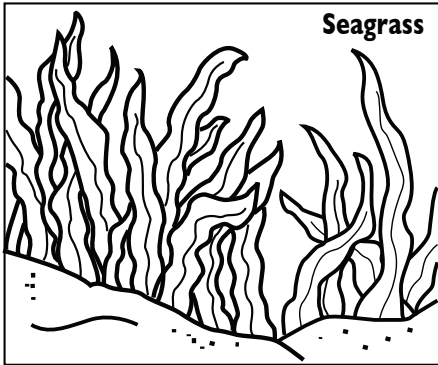
I am a Junior Fisher who takes only what I need

Great work

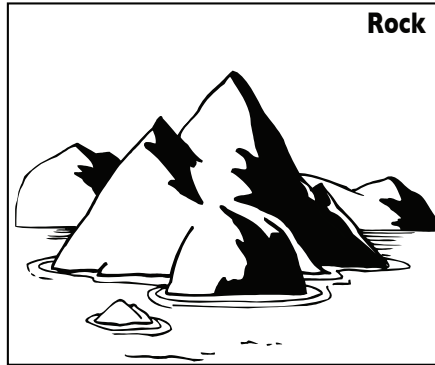


fun with food webs

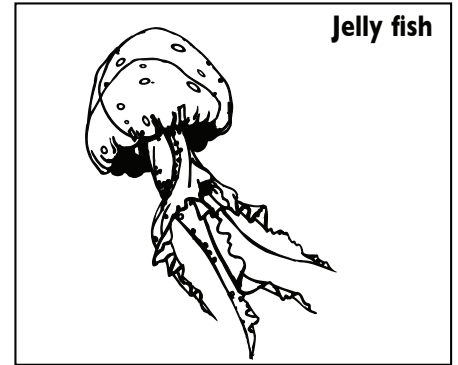
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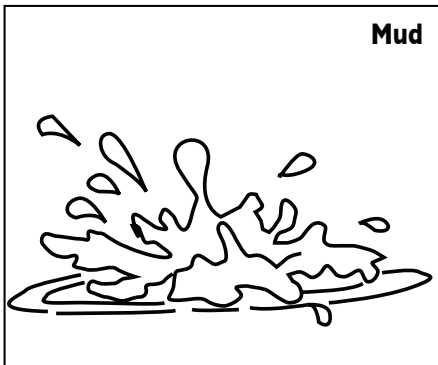
Seagrass



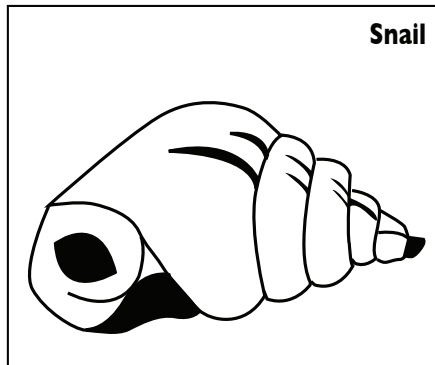
Rock



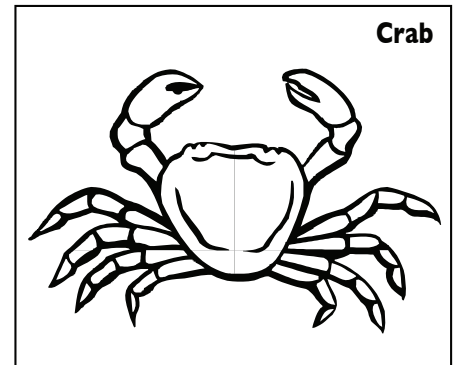
Jelly fish



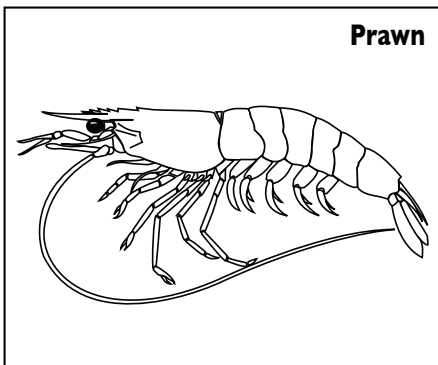
Mud



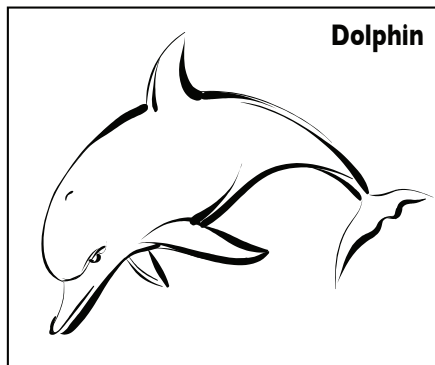
Snail



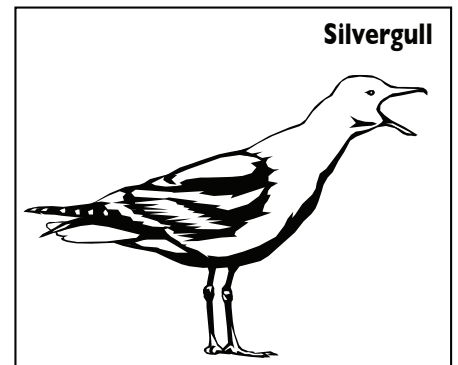
Crab



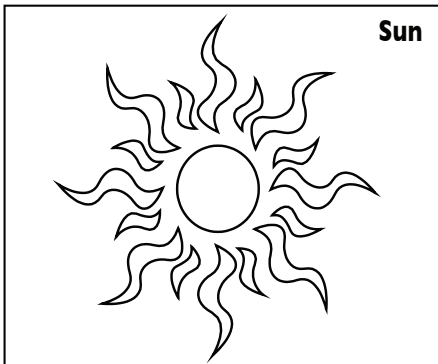
Prawn



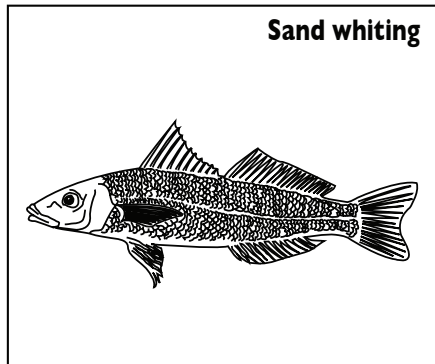
Dolphin



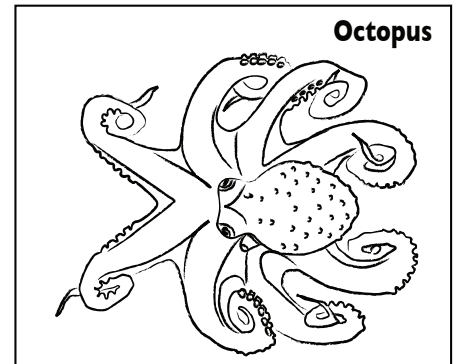
Silvergull



Sun



Sand whiting

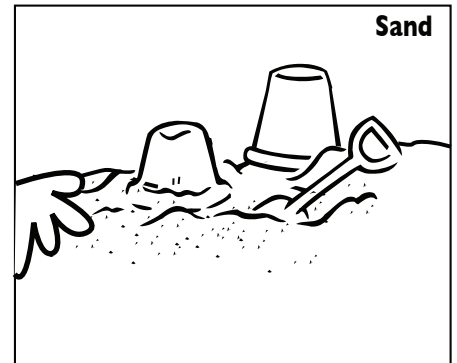
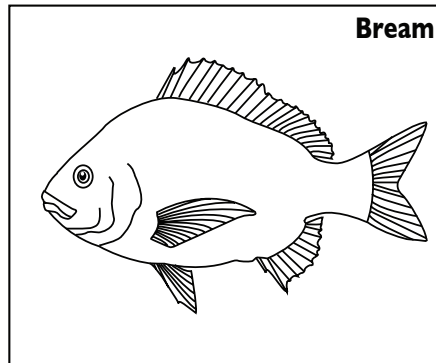
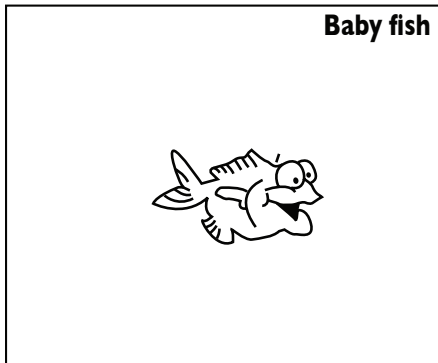
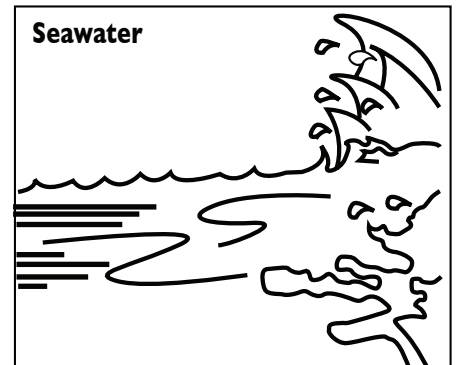
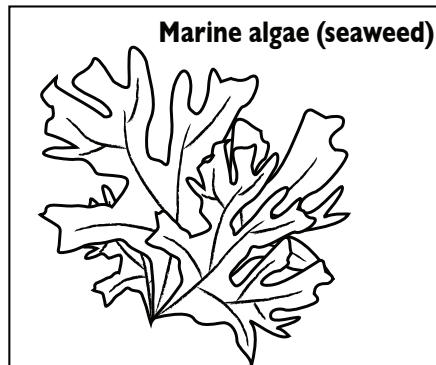
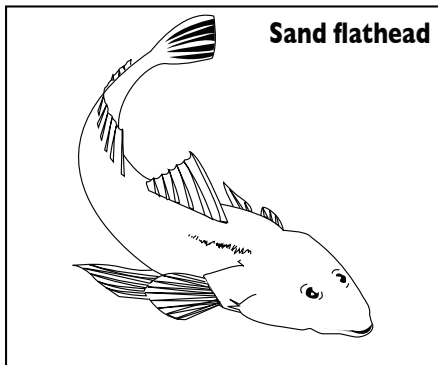
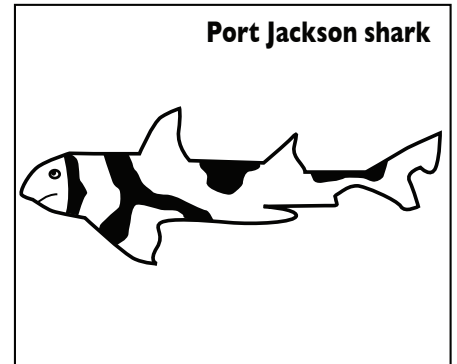
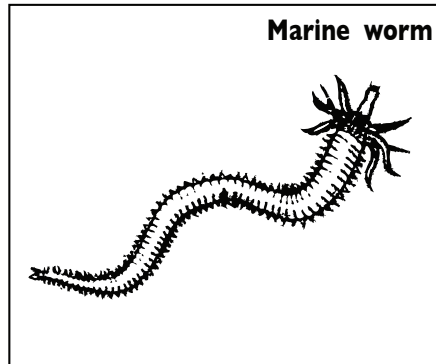
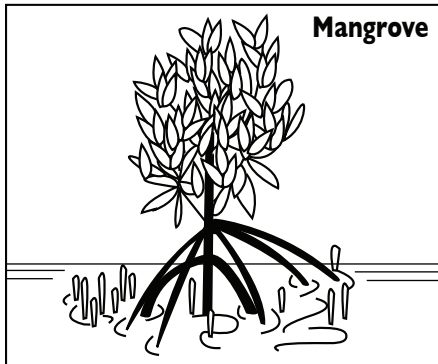
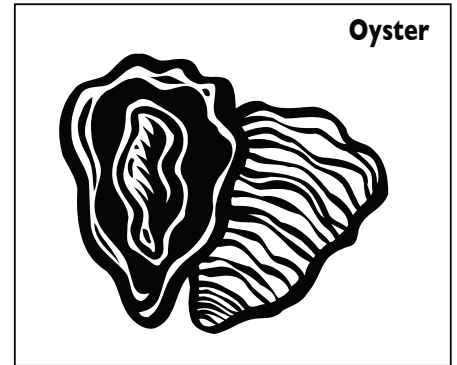
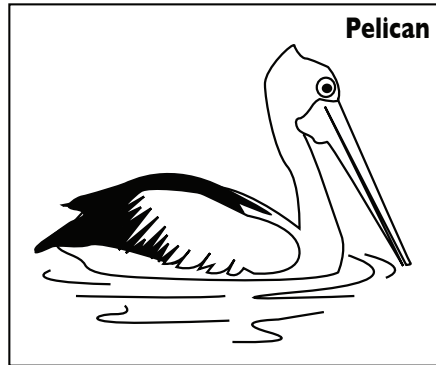
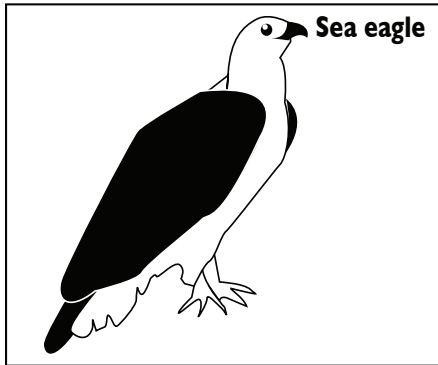


Octopus



fun with food webs

Code I



'To fish or not to Fish?'

Key To Weather Wheel

Code 2

Fine and sunny.

Top temperature of 38 degrees. Strong winds predicted in coastal areas in the afternoon, gusting to 40kms. Waves to 2 metres.

Overcast.

Top temperature 12 degrees. No wind. Fog possible in the late afternoon.

Fine and sunny.

Top temperature of 23 degrees. Gentle breeze. Waves to 1/2 metre.

Fine at first.

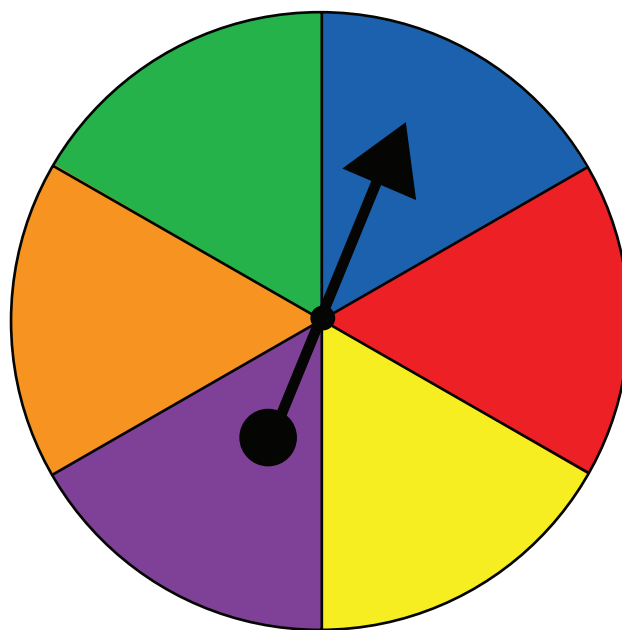
Top temperature of 27 degrees. Rain and thunderstorms ahead of a cool change. Strong wind warnings on all waters.

Inland rain.

Top temperature of 13 degrees. Easing to drizzle. Dry and overcast in coastal areas.

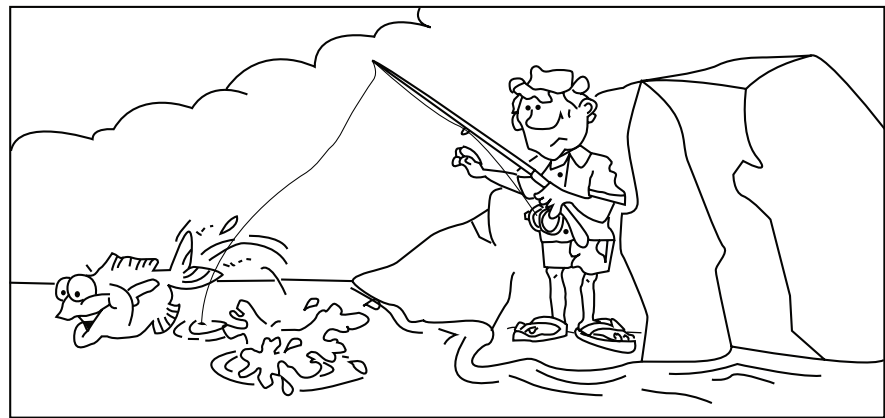
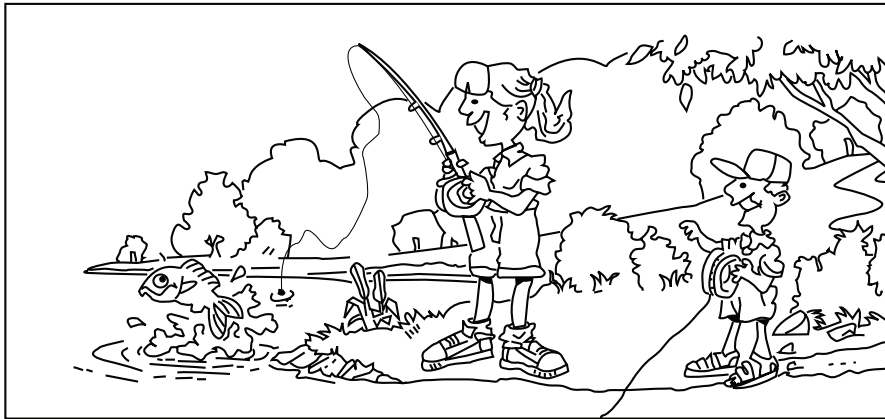
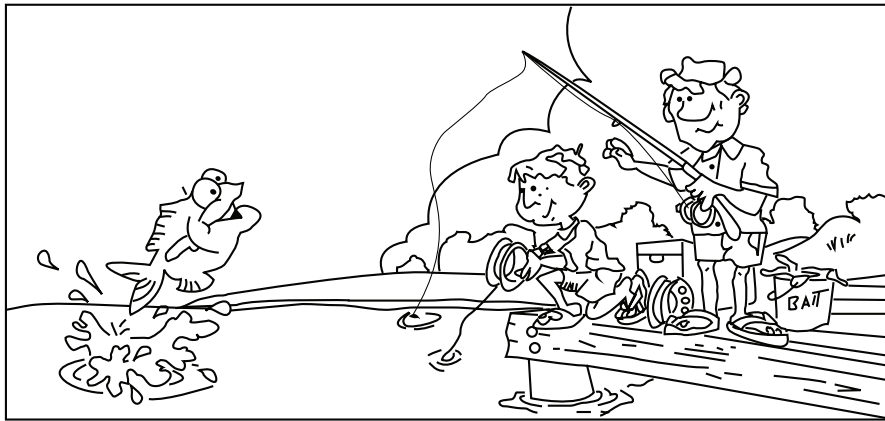
Heavy rain and hail.

Top temperature of 18 degrees. Storm clearing as front passes.



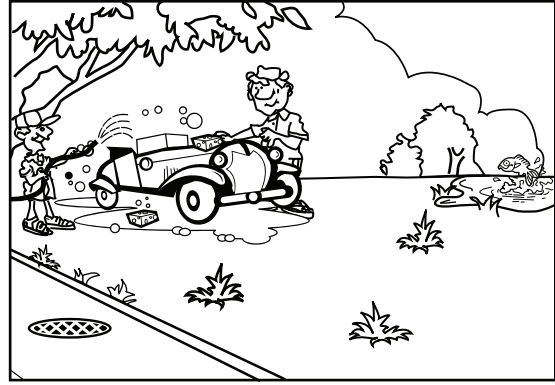
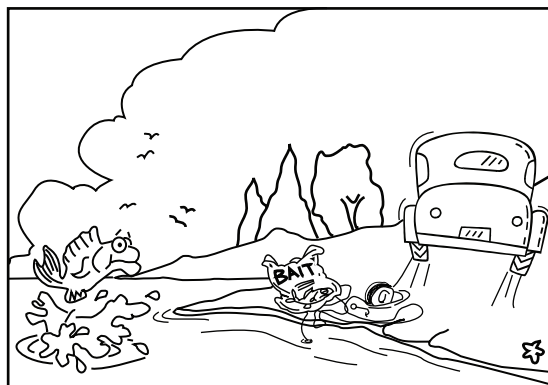
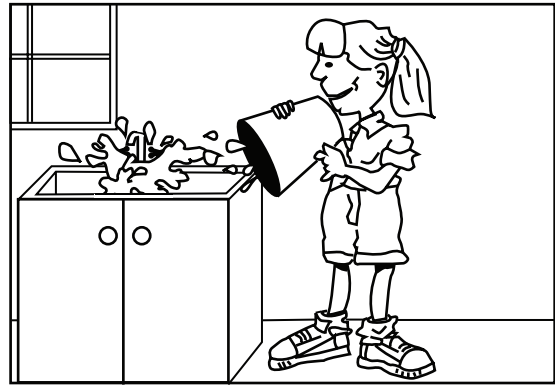
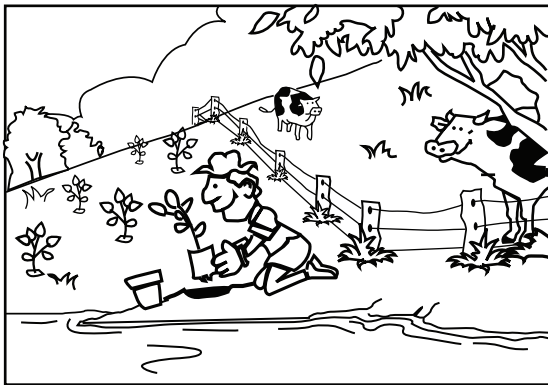
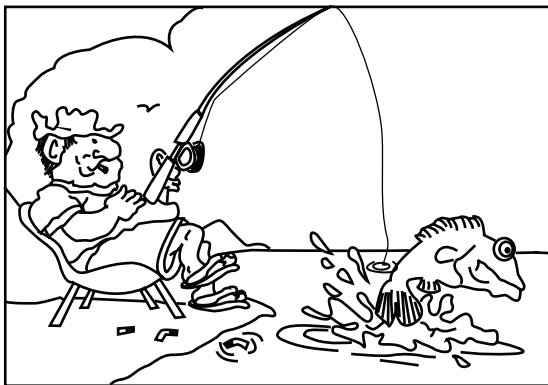
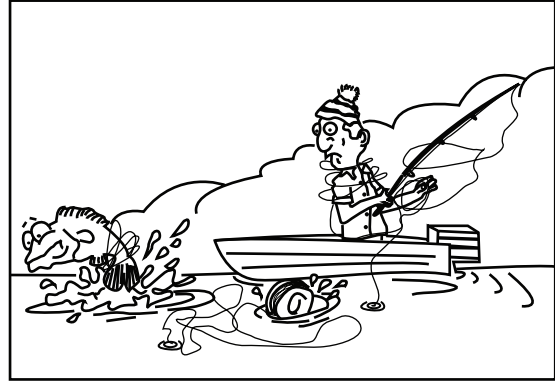
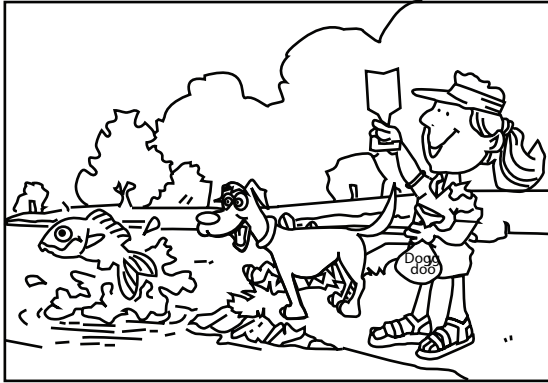
'To fish or not to fish?'

Code 2



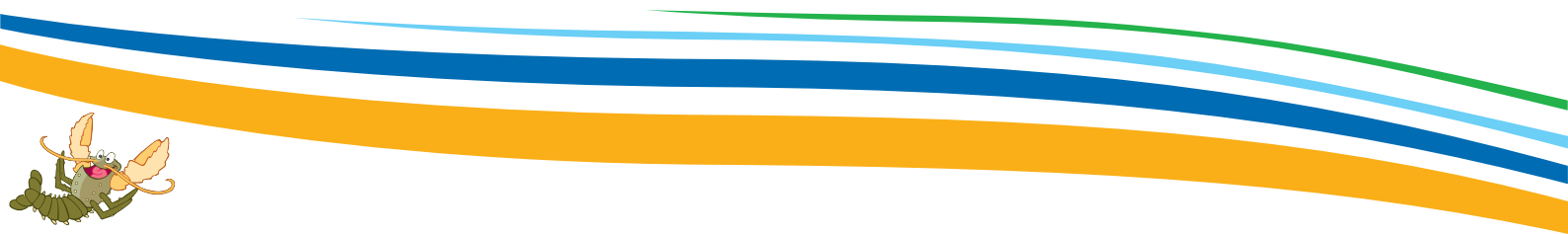
'Fish friend or foe'

Code 3



'Fish friends'

Code 3



'Fish friends'

Code 3



'Fishy Find-A-Word'

Code 4

There are 60 words in this find-a-word. Words can be vertical, horizontal and diagonal as well as backwards and forwards. Be careful as some words share letters and there are a few tricky decoys as well!

P	D	Y	E	J	Q	E	M	I	L	S	D	H	S	I	F	G	N	I	K
R	A	W	O	U	U	M	A	R	E	N	H	G	W	O	L	U	M	F	L
O	E	H	Y	V	E	V	E	A	O	O	M	A	E	R	T	S	E	G	I
T	H	I	L	E	D	W	M	M	O	G	L	R	R	E	L	E	A	S	A
E	T	T	L	N	U	U	L	K	W	A	T	F	U	K	N	M	S	A	T
C	A	I	A	I	L	A	M	U	R	R	I	I	L	T	R	O	U	T	W
T	L	N	V	L	S	B	A	V	D	F	A	S	E	N	W	O	R	B	O
I	F	G	E	E	S	A	E	L	E	R	B	H	R	U	L	E	E	R	L
V	U	T	R	P	E	S	R	R	Z	K	C	I	R	E	D	U	L	N	L
E	S	T	T	R	A	S	B	S	I	M	P	A	C	T	R	E	V	A	E
R	M	G	O	A	G	M	N	A	S	X	S	C	A	L	E	S	B	T	Y
O	U	R	A	C	R	U	I	N	R	N	A	E	C	O	A	V	R	U	A
S	L	O	Y	N	A	R	F	D	E	T	T	O	N	K	A	G	E	R	S
N	L	W	E	T	S	A	W	E	D	A	Y	R	A	U	T	S	E	A	T
O	O	T	O	A	S	R	O	C	N	A	V	H	C	T	A	C	D	L	A
I	W	H	I	I	H	R	L	A	U	Y	M	R	I	V	E	R	U	G	T
S	A	I	J	L	T	Y	L	F	G	O	E	G	A	M	A	D	A	M	I
O	Y	M	A	O	U	C	E	R	A	P	X	H	J	L	A	J	O	W	B
R	I	R	I	R	O	O	Y	U	N	G	R	E	P	P	A	N	S	R	A
E	N	I	R	A	M	D	I	S	S	O	L	V	E	R	F	M	E	S	H

JUVENILE
SHARK
MARINE
HABITAT
RELEASE
SEAGRASS
UNDERSIZE
SNAGS
LARVAE
ADULT
IMPACT
PROTECTIVE
SLIME
DAMAGE
RULER
EROSION
LEGAL
MEASURE
GROWTH
NATURAL

KNOTTED
MESH
HOOK
DISSOLVE
WET
SURFACE
SCALES
MOUTH
BREED
FISHER
MURRAY
COD
YELLOWFIN
BREAM
SEA
MULLET
LUDERICK
BROWN
TROUT
MULLOWAY

YELLOWTAIL
KINGFISH
SALMON
TREVALLY
BASS
GARFISH
FLATHEAD
WHITING
TAILOR
SNAPPER
CARP
ESTUARY
RIVER
STREAM
OCEAN
DAM
CATCH
BAIT
ROD
SAND



'A Watery Journey'



Code 5

Props:

Life for you in the water is tough...you have to find your own food, hide from predators and find shelter. Sometimes it is made even tougher when something unnatural is introduced into the water...become an aquatic animal, play our game and find out more!

Make up your own game from the marine or freshwater perspective of:

- a seabird, shark, dolphin or a killer whale.
- a platypus, tortoise, eel, or a trout cod.

20	21	22 Danger alert! You have swallowed a clear bait bag floating in the water. Go back to 17.	23	Finish 
19	18 A young boy removes fishing lines wrapped in underwater plants. Move 2 spaces.	17	16 The tide has turned and is washing in discarded fishing line. Go back to 13.	15
10 School students visit and take their rubbish home. Advance 3 spaces	11	12 A hook gets snagged in a penguin's foot. You like to eat penguins but you are in danger of swallowing the hook. Go back 4 spaces	13	14 A junior fisher quickly cuts a hook from an undersize bream's mouth and returns to the water to be caught another day. Advance to 17
9	8 You see a fisherman pulling an old floating 'ghost' net from the water. Move 3 spaces.	7	6	5
Start here 	2	3 A young scientist designs a bait box that disintegrates after a week in water. Move ahead 2 spaces.	4	

'A Watery Journey'

Code 5

Activity: Make up your own game from the marine or freshwater perspective of:

- a seabird, shark, dolphin or a killer whale.
- a platypus, tortoise, eel, or a trout cod.

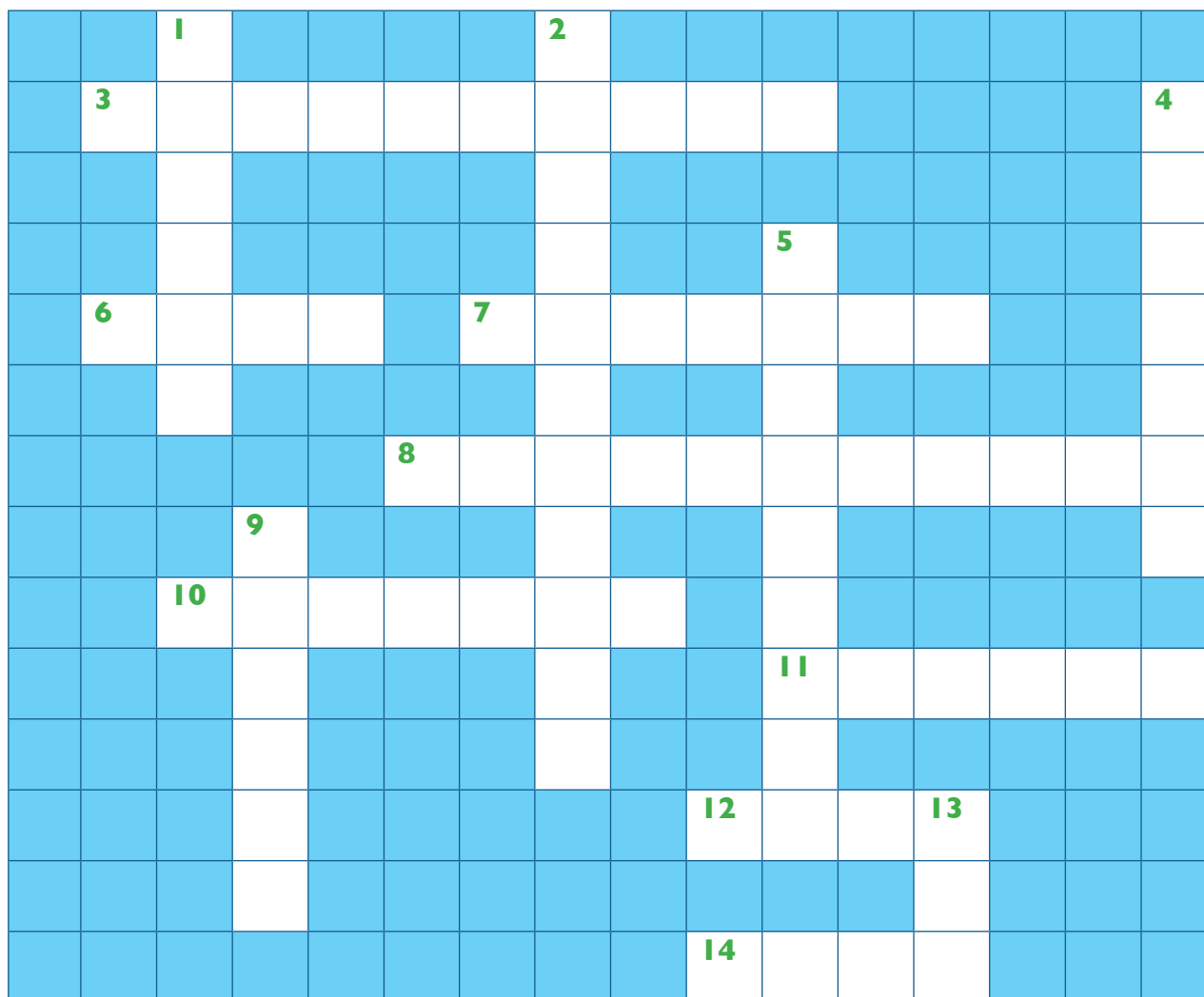
Do some research on your chosen creature to help you fill in some of the boxes

				finish
start				

Don't leave your tackle behind



Code 5



Clues

Across

3. leave only these when fishing please (10)
6. complete, by _ _ _ _ or by crook
7. a recreational sport (7)
8. by these we fishers must abide (11)
10. fish are easily fooled by this tricky tasty treat (7)
11. another name for fishing gear (6)
12. when cast a drift these continue to fish (4)
14. complete, only _ _ _ _ down the drain



Down

1. stinky this may be, but waterways are no place for it you see (3, 3)
2. invisible but deadly for our finned friends (11)
4. don't bury this! (7)
5. lethal butts (9)
9. without these on land and in sea, belly up we would all be (6)
13. warm and sky high, without it, living things can't get by (3)

