

Pungarehu and Rahotu Schools

The junior classes from these two schools with their teachers Alison Johnston and Marie Mattock visited the Taranaki Regional Council Fish Display in December. They also undertook an invertebrate study in the Patea River. With the help of a large number of parents they learned about river life and the necessity to keep our freshwater rivers healthy and free from pollution.



Adults and child learning together.

Egmont Village School



The Year 6, 7, 8 class and teacher Jocelyn Wisniewski adopted a project to enhance their school environment by developing an old horse paddock into a native tree reserve. The class researched the most suitable trees to plant and spent time and effort preparing the ground and developing a plan for placing their trees. They will be able to watch the area develop and measure tree growth in their last few years at this school.

ST JOSEPH'S SCHOOL, HAWERA



Photo Courtesy Craig Bates, The Hawera Star

The science extension group of Year 6, 7, 8 pupils with teacher Jenny Back recently planted a section of the Waingongoro River on Okaiawa farmer Mr Barry Orchard's property. In conjunction with Mr Orchard, the Taranaki Regional Council, Department of Conservation and Taranaki Fish and Game Taranaki the group aims to monitor the conditions of this section of the river to see what effect their planting has on the health of the river, and the fish and invertebrates which live in the river.

Bits'n'Pieces

Gold Medal Winners

Congratulations to Room 5 of Devon Intermediate School who featured in the last SITE newsletter. They submitted their research on the Mangaotuku Stream in the Global Net 2000 Conference Environmental Competition in Christchurch where they were awarded a gold medal for their Power-point presentation.

Environmental Dates 2001

World Wetlands Day
2 February 2001

Seaweeek - See Life
9-18 March 2001

World Health Day
7 April 2001

Earth Day
22 April 2001

Arbor Day
5 June 2001

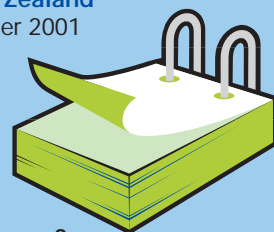
World Environment Day
5 June 2001

World Oceans Day
8 June 2001

Conservation Week (Unique NZ)
6-12 August 2001

Clean-Up New Zealand
17-23 September 2001

2001



Answers from page 3:

Word Scramble - 1) octopus 2) seaweed 3) kelp
4) periwinkle 5) limpet 6) barnacle 7) mollusc
8) starfish 9) anemone 10) hermit crab

Match the definition - 1) erosion - e 2) estuary - i
3) camouflage - g 4) algae - j 5) octopus - a
6) tide - c 7) predator - l 8) antennae - d
9) paua - b 10) dehydrate - k 11) spinifex - h
12) tentacle - f

Join the dots - starfish, mussel, scallop, chiton

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TARANAKI
REGIONAL
COUNCIL

TARANAKI REGIONAL COUNCIL
NEWSLETTER TO SCHOOLS

Welcome back to the start of another year. Hopefully the holidays have provided the opportunity to recharge the batteries and you are looking forward to the challenges that will present themselves.

Thank you to all those teachers who invited me to work with them and their students last year. I feel privileged to have had the opportunity to share and learn with them. I am impressed with the ability of today's children to take on new ideas and knowledge and how they willingly accept their role in caring for our environmental future. Another spin-off from working with students is the opportunity to see parents and children working and learning together in a discovery situation. The enjoyment generated by both groups when they are investigating the stream ecology and finding creatures they were unaware of is most satisfying.

Enclosed with this newsletter are details of some teacher training days being offered by the Council during this year. My intention is to try to provide opportunities for teachers to upskill themselves in environmental activities to use as part of their education programme. The focus for each of these days will be to provide hands-on, practical activities you can undertake with your students.

During the third term holidays the Taranaki Regional Council will also trial a holiday programme for 9-13 year old students. The programme will involve two mornings in New Plymouth, two mornings in Stratford and one morning in Hawera. Places with activities incorporating an environmental focus such as nurseries, Mt Taranaki, or invertebrate sampling will be the core activities for the week. More details will be provided to schools and students later in the year.

Finally, please let me know if you are planning any environmental activities within your programme. Perhaps I can assist either in person or with resources. I would also like to feature photos, projects or children's work on our website (www.trc.govt.nz/Education).

All the best for 2001.

S.I.T.E.

Schools in the Environment - Summer 2001 - No.16

Sea shore study

ROCK POOLS

The summer term provides the weather to undertake a class visit to study the rock pools. This issue of SITE examines the creatures and plants likely to be found and suggests some activities that you can undertake. A rock pool visit can be a tremendous start to a study on our marine environment in conjunction with Seaweeek (see below).



SeaWeek 2001

Seaweeek - See Life
9 March - 18 March 2001

- Seaweeek has been an annual event since 1992. The aims are to:
- ★ increase awareness and knowledge of our marine environment
 - ★ promote safe, sensitive and sustainable use of our coastal and marine environments
 - ★ instil a sense of personal responsibility for the marine environment
 - ★ develop an understanding of the relationship between our society and the marine environment

Information regarding Seaweeek is available through www.environment.org.nz/seaweeek.

In addition to the online resources, a resource kit is being put together for all interested bodies. The resource kit includes:

- ★ Life's a Beach - coastal management resource kit targeted at Levels 3-6
- ★ Marine Invaders booklet and posters
- ★ Marine Reserves poster
- ★ Water Safety booklet

Copies cost \$20 for NZAEE members and \$45 for non-members. Kits can be ordered from:

National Seaweeek Co-ordinator
Tanya Jenkins
PO Box 12056
CHRISTCHURCH

Phone/Fax 03 384 4800
e-mail tanya.jenkins@paradise.net.nz



Beach cleanup - perhaps a Seaweeek activity?

THE ROCK POOLS

Rock pools provide a fascinating place to study. Most pools have a large number and variety of plants and animals and with skilled observation and patience you should be able to locate a substantial number of them. You should begin by sitting quietly alongside your pool trying not to cast shadows over the water. Many of the animals will have seen your movements and will be hiding. Gradually they will appear from their hiding place and will become apparent to you.

Since the eighteenth century all living things have been grouped into categories according to their features. If we use this grouping it will help us sort some of the creatures even if we don't know their particular name. Remember that the purpose of your study should be to discover how each living thing fits into the pattern of life in a rock pool community.

Before we look at the rock pool categories of plants and animals remember that it takes a very long time for a community to become established. We should develop, and agree to, some procedures to ensure we don't destroy the balance of the community by thoughtless fieldwork. These procedures might include:

- do not disturb life more than you have to
- if you look under a rock place the rock back when you have finished
- do not remove plants and animals from their habitat (most will not survive if you take them back to school)
- take extreme care when working near the low tide zone
- put your creatures in water while you study them but always put them back in their natural environment

Here are a few of the things you might find.

Algae

Commonly referred to as seaweed

- no root, stem or leaf structure
- flexible to withstand battering by waves
- able to withstand exposure to air at low tide

Green Algae

Gutweed
Sea lettuce
Sea Rimu
Sea Emerald
Velvet weed

Brown Algae

Necklace weed
Bull Kelp
Bladder kelp
Flapjack

Red Algae

Carrageen
Coral seaweed
Karengo

Tunicates

- leathery protective coat
- two siphon-like openings

Sea Squirt

Sea Tulip

Coelenterates

- body built on a 'wheel-spoke' pattern
- hollow gut, one opening (mouth)
- numerous tentacles

Sea Anemone
Jellyfish

Worms

- related to earthworms
- flatworms have flattened leaf-like shape

Paddleworms
Flatworm
Spiny tubeworms
Ribbonworm

NOTE: Full details regarding these plants and animals are available from a variety of materials such as The Coast (Te Takutai Moana) Unit (available from Taranaki Regional Council), reference books, Internet, websites etc. Monitoring sheets and various worksheets for field trips are available on request.

Crustaceans

- body divided (head, thorax, abdomen)
- jointed external skeleton
- two pairs of antennae

Barnacles
Shrimps
Crayfish
Crabs
Sandhoppers
Sea Louse



Molluscs

- muscular 'foot' used for moving and holding on
- soft bodies covered by shell

Chitons eight overlapping plates

Univalves (one shell)

Limpet Whelk
Paua Periwinkle

Top Shells
Turban Shells
Oyster borers

Bivalves (two shells)

Rock Oysters
Fan Scallops
Mussels
Octopus

Echinoderms

- spiny skins
- radial bodies
- 'tube feet' for moving

Spiny Starfish (5 or more arms)
Sea Eggs (Sea Urchins)
Sea Cucumbers
Cushion Star
Brittle Star

Fish

Rockfish Triplefin
Suckerfish (Clingfish)

Junior Environmentalists Page

Make a mobile

Search along your beach for interesting flotsam and jetsam. Beginning with some straight sticks and nylon fishing line or string arrange your treasures to make a mobile. Items which are useful are:

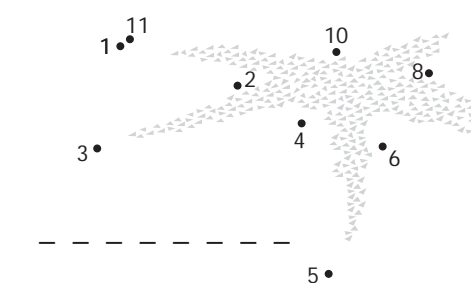
seaweed, driftwood, old shells, nylon, plastic pieces.

Scramble

Unscramble the letters below to make the names of rock pool inhabitants

- ootspuc
- seedaw
- klpe
- plknwreie
- lpmite
- beaanlcr
- mlusoc
- srsfhati
- aneenom
- htrime cbar

Hint: The first letter is done for you!



Word find

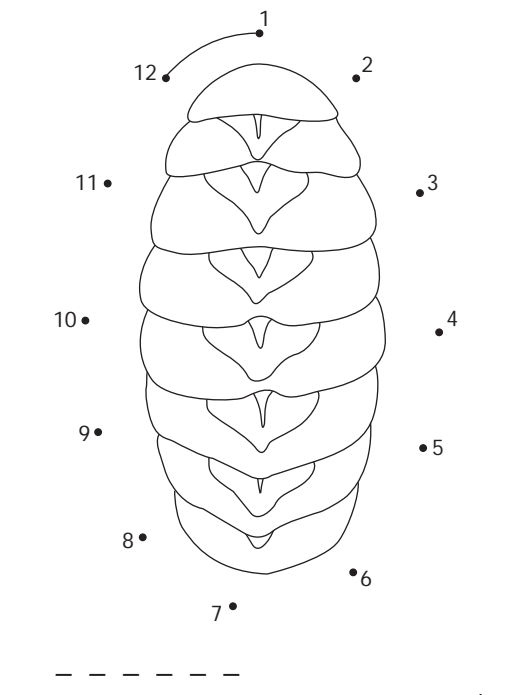
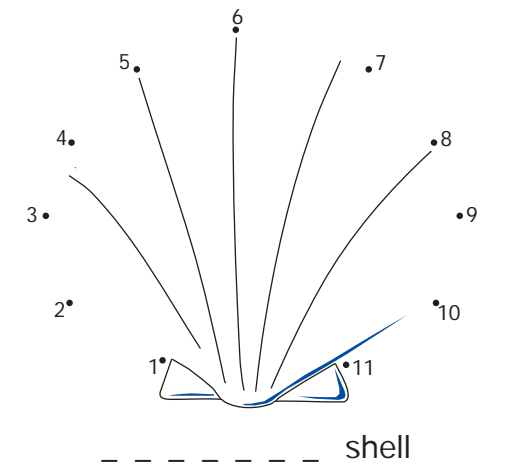
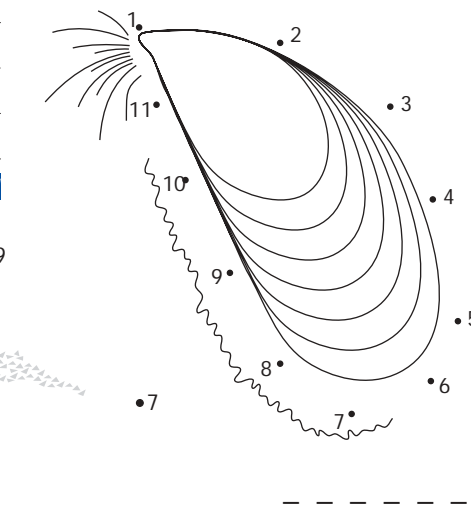
Find the rock pool related words in the maze. They run up, down, diagonal or backwards.

algae kina
sea jellyfish
sandhopper limpet
anemone seaweed
mussel tide
periwinkle whelk
reef hermit
waves kelp
suckerfish coral
octopus paua
conservation crab

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

Join the dots

Join the dots to find the rock pool creatures and fill in the name in the spaces provided.



Match the definition to the title

1. erosion	a a rock pool animal with eight legs
2. estuary	b a creature with beautiful colours in the shell
3. camouflage	c movement of the sea by the moon's pull
4. algae	d stick like stalks at the front of an animal
5. octopus	e damage done to land by water and wind
6. tide	f another name for a creatures legs
7. predator	g a method used to disguise your appearance
8. antennae	h a type of grass excellent for holding sand together
9. paua	i the wide channel of a river near the sea
10. dehydrate	j the technical name for seaweed
11. spinifex	k loose moisture usually from the sun's effect
12. tentacle	l an animal that lives on other animals



answers on page 4