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Introduction

An Australian childhood does not seem complete unless it is filled with memories of the beach. The images of long, lazy, sweltering days, sunburn, soggy t-shirts, jellyfish welts and sandy lunches lurk in the recesses of our mind, as do memories of seagulls screaming overhead and fighting for a share of newspaper-wrapped chips and children with boundless energy begging for yet another swim. Our beaches are precious and fragile. Careless and often selfish actions are endangering the animals and plants of the sea. Rock pools have been plundered, birds and fish have been killed by impenetrable coatings of oil and the warming earth is changing the ecology. If we are to save our beaches, we must engender in our children, not only a love for the environment, but an understanding of how all that lives within it are inextricably linked. Hopefully this unit will go some of the way towards fostering respect for and an understanding of how to care for the environment.

This book has been designed to ease the work of today's busy teacher. Learning outcomes have been included where appropriate and reference has been made to Howard Gardner's theory of Multiple Intelligence and both Bloom's Taxonomy (see page 7 for an outline) and Williams' Taxonomy (see outline on page 8).

Howard Gardner's Theory of Multiple Intelligences provides teachers with an excellent model for the design of interdisciplinary units, student worksheets, learning stations and group projects. Gardner points out that (1) every student has at least one dominant intelligence (although he or she may have more than one); (2) these intelligences can all be nurtured, strengthened and taught over time; (3) the intelligences do not exist in isolation but interface and interact with one another when a student is completing a task; and (4) the intelligences provide teachers with seven different ways to approach the curriculum. Gardner has identified and described eight major intelligences.

Bloom's Taxonomy is a well-known model for teaching critical thinking skills in any subject area. Based on the work of Benjamin Bloom, the taxonomy consists of six different thinking levels arranged in a hierarchy of difficulty. Any student can function at each level of the taxonomy provided the content is appropriate for his or her reading ability. In order for teachers to consistently design lesson plans that incorporate all six levels, they should use the taxonomy to structure all student objectives, all information sessions, all questions, all assigned tasks and all items on tests.

William's Taxonomy is another important model to use when teaching thinking skills. While Bloom's Taxonomy is used for teaching critical thinking skills, Williams' Taxonomy is used for teaching creative thinking skills. Although there is a relationship between these two models and even some overlap, it should be noted that critical thinking tends to be more reactive and vertical in nature while creative thinking tends to be more proactive and lateral in nature. William's Taxonomy has eight levels, also arranged in a hierarchy, with certain types of student behaviour associated with each level. The first four levels of the Williams' model are cognitive in nature while the last four levels are affective in nature.

Within the following pages teachers will find a wealth of material created to ensure that students in the classroom are challenged intellectually and creatively. This unit of work has been written to ensure that not only the requirements of SOSE curriculum materials have been met but also that a large number of other Key Learning Area outcomes are also met.

Word Search

seaweed

rocks

snails

fish

sand

shipwreck

thermometer

diver

tank

water



t	p	s	e	j	r	l	r	q	t	u
b	h	h	n	f	e	m	o	s	p	v
z	a	e	i	a	v	o	c	n	x	t
r	f	b	r	g	i	k	k	w	r	a
e	a	i	b	m	d	l	s	y	z	n
t	k	b	s	h	o	h	s	i	m	k
a	l	g	c	h	o	m	j	n	p	q
w	s	h	i	p	w	r	e	c	k	s
s	e	a	w	e	e	d	r	t	o	u
c	e	f	d	r	t	v	x	m	e	w
x	q	l	p	s	a	n	d	o	t	r

Beach Scenes

Getting Started

Encourage students to turn their classroom into a beach scene during this unit.

Ask them to bring beach related materials to school. These could include:-

- items collected during a visit to the beach, such as seaweed and shells
- items taken to the beach, such as bucket, spades, towels, sunscreen etc.
- items associated with the beach such as boats, fishing lines, rods, pictures of marine life, or stuffed animals
- pictures and items used for the beach or sea, such as fish and crustaceans.

Naming, Classifying and Sorting Activity

Divide the children into groups of four to six, assign them each a section of the classroom and encourage them to decorate their section to represent a beach scene

You may need to supplement the items they bring with

- coloured cellophane (used to represent water, sun or sand)
- polystyrene (which can be coloured to represent seaweed, rocks etc.)
- butchers paper, textas, scissors, string, sticky tape (so the children can draw any items, or connect as required).
- index cards

Directions:

1. Copy BLM 5 for each of the children. Ask them, after studying each of the completed displays, and using one card per item, to write the name and draw a different item of interest from the displays on each card.
2. Children return to the work tables and working in groups of 3-4, ask them to sort and categorise the information using BLM 6 which is designed to help students make distinctions between items. Suggested headings could be:
 - creatures from in the water
 - creatures from the land
 - animals with shells
 - people's things
 - plant life

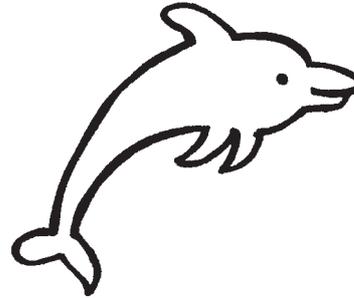
Other classifying activities could include:

- finding similarities in the cards of group members
- finding differences in the cards
- identifying natural and human items
- sorting, according to living and inanimate

Believe it or not

Make a special spot on the blackboard or notice called 'Believe it or not!' Print, or post a new fact in this spot each day. Read and discuss each amazing fact with the class.

- Groups of bottlenose dolphins come to shore and seem to enjoy the company of people.

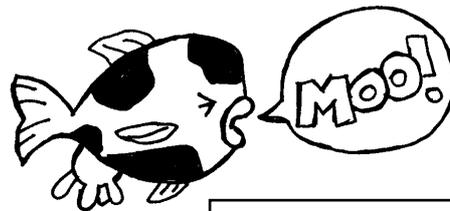


- Whales 'sing' underwater.

- The starfish can grow a new arm. It can even grow a new body.

- Boxfish can't bend their bodies to swim or hunt. They stand on their heads and blow away sand to uncover their victim. They then suck it up through lips which are like tubes.

- Up to 200 saltwater crocodiles are caught in Darwin Harbour each year.



- There is a fish called a cowfish... but it doesn't say moo!!

- Seasnakes can dive to 100 metres and remain submerged for up to 30 minutes.

- Pineapple fish seem to glow in the dark. They use their 'light' to hunt fish for food.

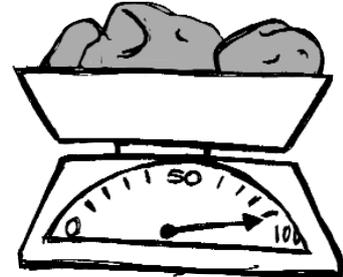
Learning Centre Activities

These activities help students reinforce the curriculum and internalise learning at their own level, whilst focusing on beach themes.

Judging Weights

Equipment:

- A variety of beach stones
- colourful bucket
- kitchen scales



Directions:

1. Provide each child with BLM 8
2. Label the stones
3. Sort the stones from the bucket according to their size
4. Sort the stones from the bucket according to their colour
5. Weigh the stones

(You can add a bit more challenge and variety to this activity by providing a range of items to be weighed.)

Beach Collage

Equipment:

- Old magazines
- glue
- scissors
- A3 poster paper



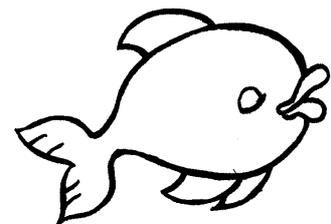
Directions:

- Find pictures of people playing by/on/under the sea in the old magazines.
- Cut out the pictures and paste them into a scrapbook, or make up a collage of a beach scene.

Venn Diagram

Equipment:

- coloured pencils
- BLM 9
- scissors
- glue



Directions:

- Provide each child with BLM 9
- Look at the animals at the bottom of the sheet
- Read the labels and discuss which picture would best match the writing
- Children colour the drawings, cut them out and paste in the correct spot