



Growing and Changing

Stage 1

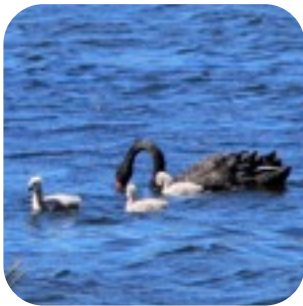
HSIE and Science and Technology
Change and Continuity • Living Things • Investigation



Curriculum

Focus: understanding that living things grow and change over time, in cycles and stages. Human communities also grow and change over time.

LINKS WITH OTHER KLA'S



All living things pass through life cycles and have various needs at each stage

Rationale

In this unit students create a simplified timeline for their local area and identify change and continuity within the community as symbolized by the surf club. Understanding change and growth of living things is inspired by investigation of coastal plants. While identifying animals and their needs will be stimulated by observations along: sandy and/or rocky shores, the park and waterways. Learning within the context of the students' environment increases opportunities for quality teaching in and about the environment.

Subject Matter Focus

In this unit, students will learn about:

• cultural change	• life cycles
• cultural symbols	• needs of living things

Implications for learning

In this unit, students will have opportunities to:

• draw and label artifacts	• describe needs & uses of coastal plants & animals
• identify and record changes to a built environment	• observe life cycle stages of select plants & animals

Expression of Values and Attitudes

In this unit, students will

• exhibit curiosity to learning about their community	• express enjoyment learning outside the classroom
• demonstrate responsibility in actively caring for their environment	• appreciate various ways people contribute to their community through citizenship

SciTech Outcomes & Indicators		HSIE Outcomes & Indicators
LTS1.3 Identifies and describes ways in which living things grow and change	INV S3.7 Conducts guided investigations by observing, questioning, predicting, collecting and recording data and suggesting possible explanations.	CCS1.2 Identifies changes and continuities in the local community
•living things grow and change over time and have life cycles	•responds to stimulus materials with questions such as How... Why...	•develops language associated with time and place
•plants grow from seeds	•follows instructions to experience success with safety	•identifies personal experiences related to different ages.
•animals and plants need food for growth	•helps to make decisions about ways to investigate	
•plants make their own food	•suggests evidence needed to answer each question using a variety of collected data	
•plants and animals have particular needs within the environment in which they live		
•plants need various requirements for growth		

Learning Experiences at a coastal location in the Illawarra

1 Time and Place

Welcome to Country - plus brief discussion of the traditional owners of the land.

Read "Isn't it a Beautiful Meadow" to highlight the scope of changes made by people to meet their needs.

Photographic partners: in pairs students take turns at using their partners as cameras to take photos of the environment. After each "camera" has taken three photos they then have to recount their photos to their partner.

Use unfinished sentences to express values and attitudes toward changes to the environment through cultural needs eg I would rather have a park than a

Timeline: a. Handle a variety of Aboriginal artifacts. Draw and label a boomerang to symbolize the long-standing existence of Aboriginal culture. Identify a time period on the timeline to indicate Aboriginal presence.

b. Examine an image of the Endeavor or Cook. Draw and label a picture to symbolise Cook's voyage along the east coast of Australia. Identify the on the timeline when this voyage occurred.

c. Examine an artifact relevant to the timber industry. Draw and label a picture of the artifact to symbolise the early timber getters. Identify on the timeline when this activity was taking place in the area.

d. Examine an artifact relevant to the surf life saving association of Australia. Draw and label a picture of the artifact to symbolise this organisation's work. Identify when surf life saving began in this community.

e. Discuss ways in which students interact with their local community and environment eg surf club, swimming lessons at the pool, playing at the park etc. Students draw and label a picture of themselves engaged in one of these activities. Students write a time when they might do this eg on Sunday mornings, after school etc.

Ask students to imagine themselves in ten years time interacting with their community and/or environment to describe what they envisage themselves doing and where eg going to Bulli HS, surfing at Sandon Point, doing surf patrols on weekends at Thirroul or having driving lessons near the beach.

Learning Experiences at a coastal location in the Illawarra

Investigating Living Things - Plants

Blindfold partners - in pairs students take turns at being blindfolded to be led safely by the seeing partner to a tree. At the tree the blindfolded partner is instructed to feel, smell, hug etc. and remember special features of the tree. The blindfolded partner is then led away, the blindfold removed and they then have to identify their tree. Swap. Describe the textures, smells etc. of the various tree.

Read "High Above the Sea" to discuss the needs of plants and animals and describe the coastal geography of their various habitats.

Banksia Investigation -

- show and discuss with students the leaves, flowers and fruit of the Banksia tree. In pairs students set off in search of the Banksia tree equipped with magnifying glasses to aid observations. Brainstorm descriptive features of the Banksia.
- In groups students are allocated a Banksia tree that they are going to investigate to observe and record a variety of features such as number of flowers, number of fruit, height of tree etc.
- Students label a diagram to show the life cycle of the Banksia tree.
- Students identify and indicate on the diagram the needs of plants.
- Students explain how the Banksia plant grows and changes from a seed to an adult.

Propagating Seeds - the capillary bed - discuss the purpose and name the parts of the capillary bed. Students fill their individual propagating pots with soil and add their seed (suggest Coastal Wattle that has been heat treated). The capillary beds are taken back to school for students to care for and monitor in class over the next few weeks.

Caring for the Coast - Visit the fence and access through the dunes. Discuss why people need to keep the access path. Students discuss a message that might go on a sign to inform the public why they should keep to the track.

Investigating Living Things - Animals

Treasure Hunt - show students six items derived from plant and animals (not alive) along the beach. Individually, students search for these objects. In a circle, sit and share those things found by students to discuss the similarities and differences between plants and animals.

Aboriginal perspective - making a fishing hook - demonstrate to students the use of a limpet shell to make a fishing hook. Students make their own limpet shell fishing hook.

Habitat Exploration - survey the sandy shore, rocky shore and grassed / tree area to identify and record a variety of animals associated with each habitat. For each animal surveyed students identify and list its needs.

Read "Lester and Clyde" - discuss the needs of animals for a clean and health environment

Active citizenship - litter clean up - students collect litter from the shoreline (using gloves and provided teacher have checked for sharps beforehand) and discuss the origins and possible impacts upon animals. Students express and share feelings about litter in the environment.

Learning Experiences Back at School

Propagating Seeds - the capillary bed - provide for and monitor germination. Draw a labelled diagram of the germination process.

Environmental expression - use various media to draw symbols indicative of changes over time in the students' community. Sequence and exhibit the artwork in a timeline.

Environmental messages - students are asked to consider what information would they write a sign at the beach as to how and / why people can care for coastal plants and animals.

Community Collage - students sort through magazines and brochures to source images representative of their community. Working collaboratively a class community collage can be created.

Retrieval charts and / or using ICT - create a retrieval chart and / or data base of the plants and animals associated with the different habitats.

Resources		
On-line	Equipment	People / Places
http://illawarraisimages.wollongong.nsw.gov.au	gloves, large bags for rubbish	various coastal locations across the Illawarra eg Thirroul, Nth Wollongong
http://www.wollongong.nsw.gov.au/library/4684.asp	trays, plant medium (ie river sand), propagating tubes, wattle seeds	Illawarra Environmental Education Centre teaching staff
http://en.wikipedia.org/wiki/Wollongong,_New_South_Wales	blindfolds, hand lenses	Wollongong Heritage Museum
TaLe Learning Object Details - The night of the bilby: find food	artifacts - various - Aboriginal, coal, timber, surf life saving	Kiama Heritage Museum
Google Earth	clipboards, blackline masters for recording observations, pencils	
TaLe various learning objects re life cycles and food chains. GREAT!!	"Isn't it a Beautiful Meadow" "Lester and Clyde" "High Above the Sea"	

This program allows students and teachers studying the Stage 1 COG's unit, Growing and Changing to be supported by the Illawarra Environmental Education Centre to investigate a coastal environment/community within the Illawarra.

Utilising ICT, Teachers are advised to view and source some of the wonderful materials on the TaLe website <http://www.tale.edu.au>.

This program advice is to be used in conjunction with the suggested worksheets, Illawarra EEC booking confirmation and risk assessment.

OUR COMMUNITY'S TIMELINE

Look at the artifacts to **draw** a symbol for each heading 1-4.
Draw yourself for 5. **Tick** a date to match each symbol.

SYMBOLS	DATES
1. ABORIGINAL	<input type="checkbox"/> BEFORE 1770 <input type="checkbox"/> 1770 <input type="checkbox"/> 1815 <input type="checkbox"/> 1908 <input type="checkbox"/> PRESENT
2. CAPTAIN JAMES COOK	<input type="checkbox"/> BEFORE 1770 <input type="checkbox"/> 1770 <input type="checkbox"/> 1815 <input type="checkbox"/> 1908 <input type="checkbox"/> PRESENT
3. TIMBER GETTING	<input type="checkbox"/> BEFORE 1770 <input type="checkbox"/> 1770 <input type="checkbox"/> 1815 <input type="checkbox"/> 1908 <input type="checkbox"/> PRESENT
4. SURF LIFE SAVING	<input type="checkbox"/> BEFORE 1770 <input type="checkbox"/> 1770 <input type="checkbox"/> 1815 <input type="checkbox"/> 1908 <input type="checkbox"/> PRESENT
5. ME	<input type="checkbox"/> BEFORE 1770 <input type="checkbox"/> 1770 <input type="checkbox"/> 1815 <input type="checkbox"/> 1908 <input type="checkbox"/> PRESENT

OUR SURF LIFE SAVING CLUB

Complete the sentences.

1. Our surf life saving club is _____ .
2. Our surf life saving club began in the year _____ .
3. Our surf life saving club is _____ years old .
4. Our surf life saving club is built on the _____ .
5. Our surf life saving club is next to the _____ .
6. Our surf life saving club is in front of the _____ .

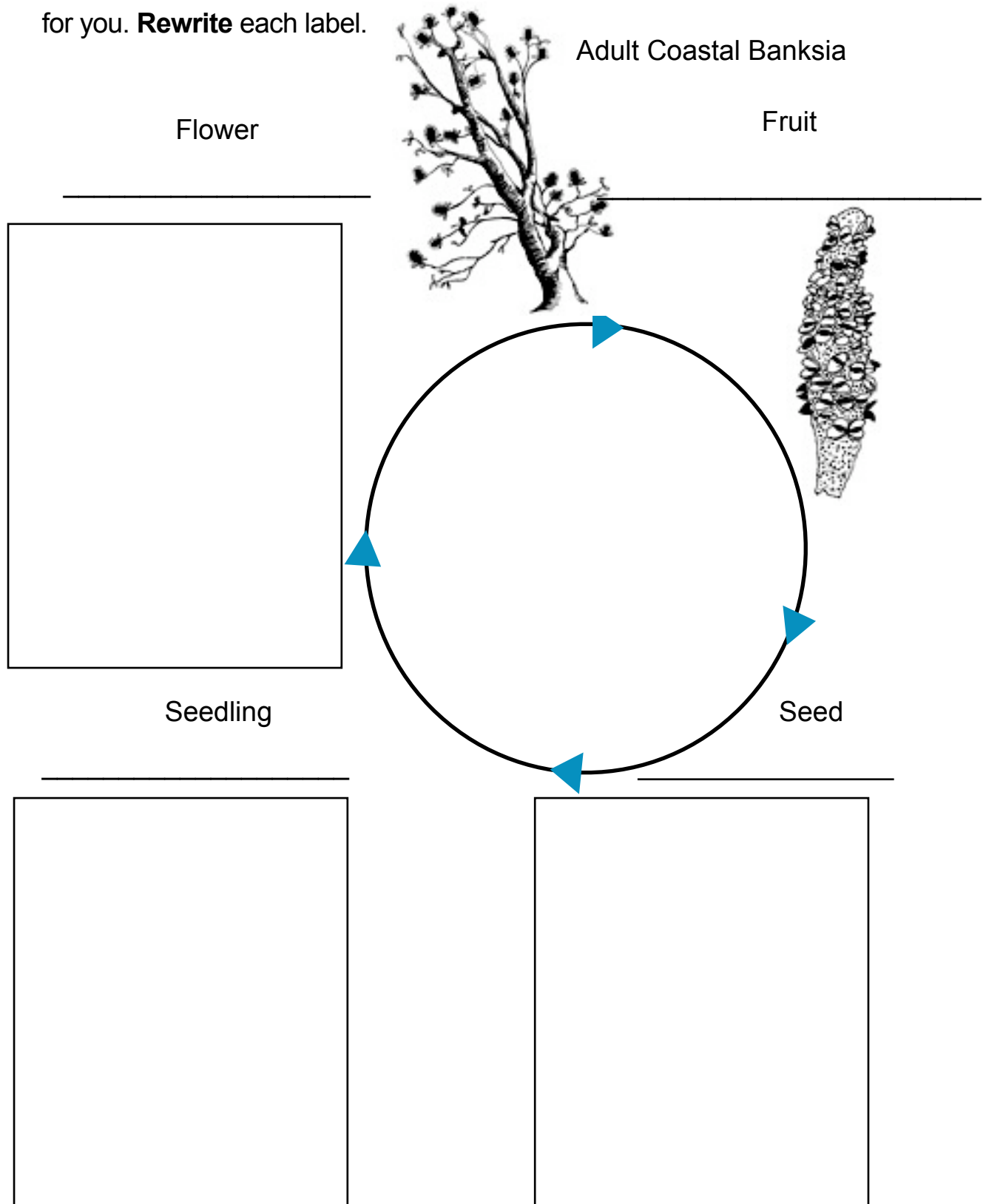
Draw a picture of the surf club.

Write a label to best describe each heading.

COLOUR	BUILDING MATERIALS	TEXTURE

COASTAL BANKSIA

Drawing pictures to match each life cycle stage label. Fruit is drawn for you. **Rewrite** each label.









Circle the most correct answer.




Coastal Banksia life cycle starts as a (seedling / fruit / seed).

COASTAL ANIMALS

1. **Tick** each box for animals seen. **Write** how many animals you can see. **Draw, name** and **count** one other animal in each habitat.

Sandy Shore		Rocky Shore	
	<input type="checkbox"/> Seagull <input type="checkbox"/> Number		<input type="checkbox"/> Sea Anemone <input type="checkbox"/> Number
	<input type="checkbox"/> Pippies <input type="checkbox"/> Number		<input type="checkbox"/> Rock Crabs <input type="checkbox"/> Number
	<input type="checkbox"/> Sand Crabs <input type="checkbox"/> Number		<input type="checkbox"/> Oysters <input type="checkbox"/> Number
	<input type="checkbox"/> _____ <input type="checkbox"/> Number		<input type="checkbox"/> _____ <input type="checkbox"/> Number

2. **Tick** each box to describe how you feel about coastal environments.

My feelings about coastal environments	 Agree	 Unsure	 Disagree
a. I love visiting the sea shore.			
b. I can take sea shore animals home as pets.			
c. I think litter at the sea shore is a problem.			
d. I would like to join a surf life saving club.			
e. I live in a coastal community.			