Coastal Discovery

Coastal Guardians

Passport

Sunshine Coast COUNCIL

Our region.
Healthy.
Smart.
Creative.

First name.....

Age.....

School.....

Class.....

Insert your photo here

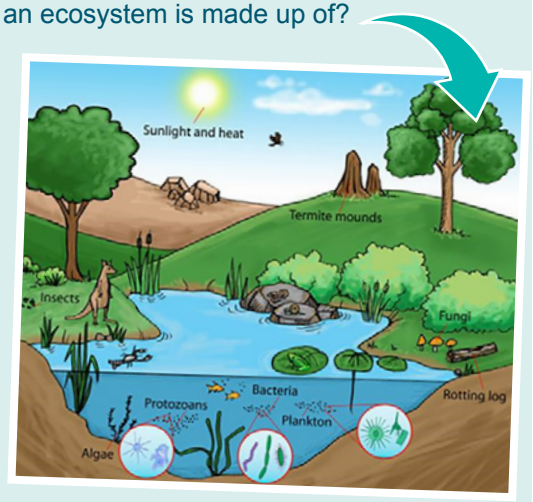
We respectfully acknowledge the Traditional Owners of the region, the Kabi Kabi and Jinibara peoples, and the broader First Nations community of the Sunshine Coast. We recognise their enduring connection to land and sea Country. We pay our respects to their Elders past, present and emerging.

About the Coastal Discovery Van

In the Coastal Discovery Van, you will learn about our beautiful, iconic, delicate and forever changing coastal zone which must be used sustainably, managed, cared for and protected by all of us. You will discover ways in which you can help protect all our favourite animals and beaches along the coast!

Questions...

What do you think an ecosystem is made up of?

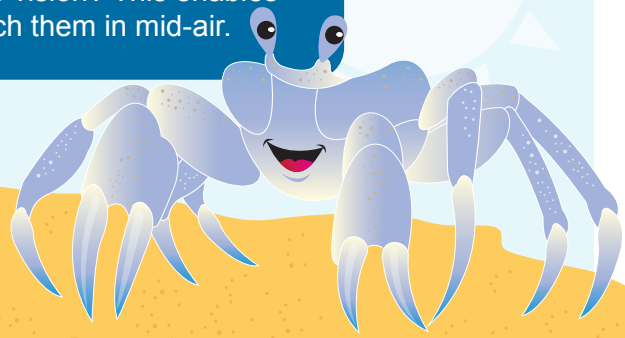


What comes to your mind when you hear the words “erosion” “dune vegetation” and “waves”

Why is it important to understand the natural events that happen on our coast?

Hello! My name Boo. I am a ghost crab that lives in the sandy beaches along the Sunshine Coast.

Did you know I have 360-degree vision? This enables me to see flying insects and catch them in mid-air.

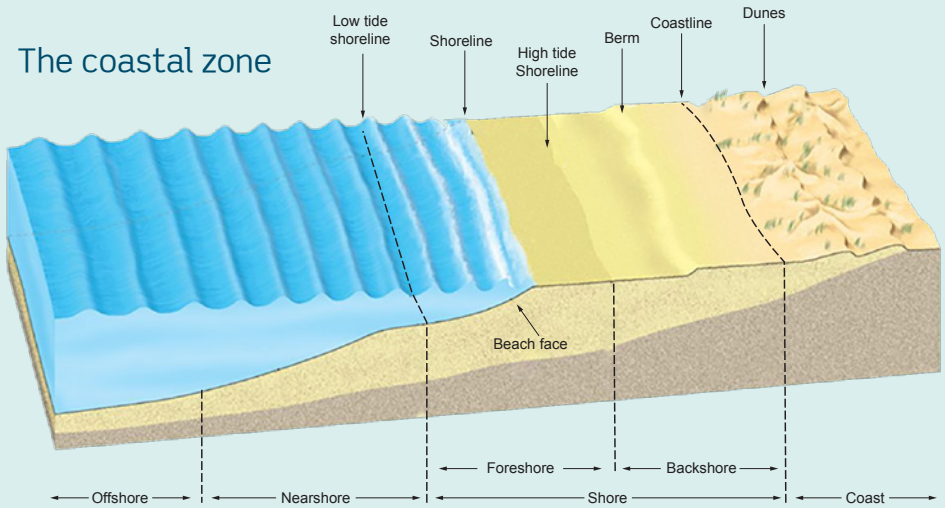


Activity 1
Coastal processes

10-15 minutes

Listening & Thinking

The coastal zone



Questions...

Explain in your own words what you think coastal processes are?

It is essential for us to understand coastal processes, because it helps us identify what to do to protect the environment, roads and all of our homes!

Matching exercise

Match the numbers 1 to 4 in the boxes to match the clue with the correct coastal process

Dune vegetation	What is it called when waves, tides and wind erode our coastline, sand is suspended in water, which creates spits and beaches.
Erosion	Helps protect us from erosion, flooding and intense storms.
Deposition	This happens when the coast gets battered and beaten by big storms.
Longshore drift	(Groynes) - this is used to capture sand as waves break along our shore at an angle and move the sand.

Great job! Now you know some of the ways our amazing coastline is formed.

Activity 2
Geographical coastal features

Interactive tactile rock display

10-15 minutes

Listening & thinking

Geological features are all around the coast, how many types of rock do you recognise?

Do they look different under the microscope?

Name of rock.....

Looks like.....

Feels like.....

Name of rock.....

Looks like.....

Feels like.....

Name of rock.....

Looks like.....

Feels like.....

Name of rock.....

Looks like.....

Feels like.....

Questions...

Take a look at your favourite rock/sediment under the microscope. Observe and record any new observations that you now see.

Activity

Look at the black and white photo and match the rock numbers to the map to discover where they are located on the Sunshine Coast.

Activity 3
Marine debris, and foreshore species

Questions...

What is marine debris?
Draw or describe what you think below...

15-20 minutes

Thinking & creating


Image: Lost Sole-Andrew Katic

1. What do you think a balloon is made of?

2. Where does it go after it has been used?

3. What marine animals like to eat jellyfish?

4. How could this debris affect marine life?

Ingested marine debris has been found in samples of dead and captured seabirds and turtles.This means that many marine organisms mistake small bits of plastic and rubbish for food.

Head over to the station with the microscope to investigate what a piece of plastic looks like close up.

Can you see the tiny fibres coming off?

Think about the processes they go through to become micro plastics
Explain in your own words what micro- plastics are:

What can we do to help reduce our impact so that these plastics don't end up in our marine environments?

Each year, millions of metric tons of the plastic produced for food packaging, personal care products, fishing gear, and other human activities end up in lakes, rivers, and the ocean. Can you see the tiny pieces of plastic in the sand?

Brainstorm some source reduction ideas and write down your top five ideas that you can implement at home or school.

1 .....

2 .....

3 .....

4 .....

5 .....

The importance of plankton

Take a look under the microscope at the plankton. Draw or describe what you see?

Work together to answer the following questions.

1. What are plankton? What is the difference between phytoplankton and zooplankton?

2. How are they adapted to life in the water?

3. Why are they so important?

Matching exercises

Match the numbers 1 to 4 in the boxes to match the clue with the four rocky foreshore species.

Blue periwinkle	Found clustered together at high tide, is a mollusc and likes to eat algae or lichens, can survive above mean high tide level.
Rose barnacle	Seen on the rocky shore-lines, feeds on limpets & mussels, has bright red bill.
Sooty oyster catcher	Grows, to 20mm wide and 12mm high, is a mollusk tinged with pink, mulberry whelks like to eat the empty shells.
Green Zoanthid	Bright green, related to corals, filter food from water.

Well done! Have you seen these species before? If so which beach?

Activity 4
Maps and timeline

10-15 minutes

Listening & thinking

Coastal Hazards

The map on the wall is of the Sunshine Coast, your home!

Take a look at it closely, the blue indicates areas that may experience inundation by the year 2100 and the pink colouration represents areas that could be impacted from storm surges and erosion.

1. Place a sticker on the map where you live.
2. Place a sticker on where you have a memory of a climatic event.
3. Place a sticker on where you have seen changes to the coast, new roads, buildings etc.
4. Place a sticker on one of your favourite places on the coast e.g. beach, park, reserve.

Did you know?

- Higher sea levels mean that destructive storm surges push farther inland than they once did, which also means more frequent flooding.
- The oceans are absorbing more than 90 percent of the increased atmospheric heat associated with emissions from human activity.
- Sea levels will likely continue to rise. Most of Australia's population lives along the coastline, where sea level plays a role in flooding, shoreline erosion, and hazards from storms.

Inspiring change

Write down some ways in which you believe you can help protect our environment here on the Sunshine Coast.

TAKE ACTION! What is something you can implement at school or home?

Activity 5
Flume/wave tank

10-15 minutes

Watching & learning

Head outside to the wave tank demonstration to learn how waves interact with the coastline.

Waves have a lot of energy!

When waves reach the coast they shift sediment at the shoreline, changing the shape of the beach. We have lots of things that are close to the coast that could be impacted during storm events, such as built and natural things.

Questions...

1. What sort of things help to generate waves and coastal flooding?

2. What have you seen located close to the coast that might be impacted in a storm?

3. Which beaches have you seen with nice big healthy dune systems?

There are different ways the council helps to manage the changing coastline.

4. Where have you seen steep beaches?

5. Where have you seen mangroves along our coastline?

6. Where have you seen sand bags along our coastline?

Notes

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