



Moreton Bay

ENVIRONMENTAL EDUCATION CENTRE

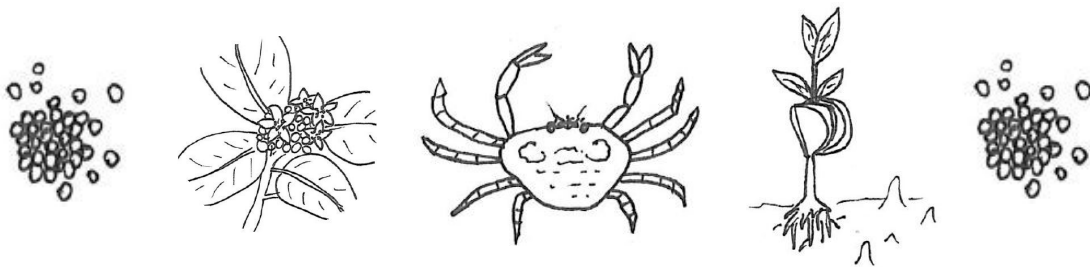
Inspiring Champions for the Bay

Mangroves and the Environment

Student Booklet



Being connected to place and engaging in hands-on experiences, inspiring curiosity and thinking is always best. We hope that you can join us on Moreton Bay in the future to explore and discover why mangroves are important.




Students, in the role of Junior Ecologists will:


- ◆ Explore open ocean and mangrove ecosystems virtually
- ◆ Sequence the key stages in the lifecycles of mangroves and crabs
- ◆ Identify the interconnections between plants, animals and the environment (food chains)
- ◆ Justify the importance of mangroves in Moreton Bay

CONNECTING TO PLACE

Welcome to Moreton Bay and its ecosystems. Moreton Bay is home to many fascinating plants and animals. Did you know, Moreton Bay's open water is home to dugongs, green turtles and sharks? Along its coasts, rivers and creeks, you will find forests of mangroves.

Read the **letter to the editor** (next page) to find out what some people are saying about the Bay and its mangrove ecosystem.





Come, join us, let's explore Moreton Bay's Mangrove Ecosystem together.

Draw yourself as a Junior Ecologist

Follow us on YouTube to explore Moreton Bay's mangrove ecosystem!

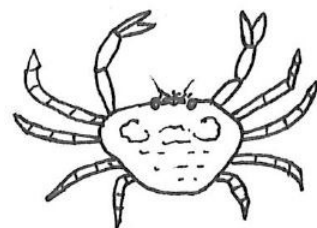
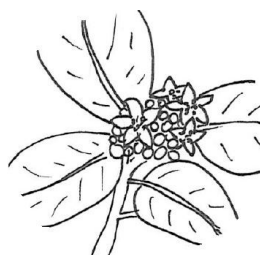
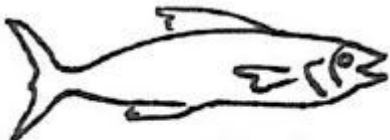
<https://youtu.be/crGDSfG3kQA>



Location—Lota Park



Location—North Wynnum Mangrove Boardwalk



LETTER TO THE EDITOR

08 NEWS

NEWS 1-20 LIFESTYLE 18-45 REALITY 21-36

25 Jan 2017, Wynnum Herald, Megan Dolling

Conversations

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ARE BAY VIEWS MORE IMPORTANT THAN MANGROVES?

COUNCIL ASKED TO REMOVE PLANTS FROM LOTA TO WYNNUM

BRISBANE City Council has been asked to remove all the mangroves between Lota and Wynnum. Wynnum Manly councillor Peter Cumming said a petition calling for the clearing would be considered at the council's first meeting for the year, on February 7.

Cr Cumming said he was concerned about the growth of mangroves in the bayside, and Lota Park was a good example of an area where some clearing was needed. "In five to 10 years' time, there won't be any view from Lota Park," Cr Cumming said. "As it is, you can see St Helena Island, Green Island, Wellington Point and Stradbroke Island. I think there are grounds for keeping that gap open."

He said the council had previously committed to keeping this gap, but action had not been taken. "About five years ago, the council chairperson said they would keep mangroves down and keep that gap – I think

that is important for park users".

Myrtle Beitz, in her book *Mangroves to Moorings Revisited*, said James Warner, a surveyor in the young colony of Brisbane, noted in his first survey of 1859, that mud and mangroves were fringing the shoreline, but beach breaks occurred north and south of Darling Point.

The council did not respond to detailed questions on the petition but said in a statement: "A petition with six signatures regarding the mangroves has been lodged and the matter is currently being investigated by council. Council's Environment, Parks and Sustainability Committee will consider this petition once this investigation has been finalised."

Have your say. Email editorial@wynnumherald.com.au with your thoughts on the removal of mangroves.



ARE BAY VIEWS MORE IMPORTANT THAN MANGROVES?

MANGROVES AND THE ENVIRONMENT

GLOSSARY

Here are terms you might come across in this exploration. Can you spot them in the find-a-word below?

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

MANGROVE: a salt-tolerant tree with roots above ground that grow along coasts and rivers

ECOSYSTEM: an area including plants and animals depending on each other and their environment for survival

ECOLOGIST: a scientist who studies ecosystems

LIFECYCLE: a series of changes a living thing goes through from the beginning of its life until death

EROSION: a process where natural forces like water and wind remove rocks and soil from a place

PERSUASIVE: making you want to do or believe a particular thing

HABITAT: the natural home or environment of an animal, plant, or other organism



QUANDAMOOKA: traditional name for Moreton Bay

PLANKTON: small organisms drifting in great numbers in bodies of salt or fresh water

PNEUMATOPHORES: mangrove roots that grow above ground and absorb oxygen directly from the air

PROPAGULE: a plant part that becomes detached from the rest of the plant and grows into a new plant, such as a seed, cutting or spore

ENVIRONMENT: all the physical surroundings on Earth

BOARDWALK: an elevated footpath built with wooden planks enabling people to cross wet or fragile land

SHORE: land along the edge of a sea, lake or other large body of water

SEDIMENT: dirt or other matter that settles to the bottom of a liquid

PRODUCER: a plant that gets energy from chemicals or the sun and converts useable energy into food

CONSUMER: an animal that gets energy by feeding on plants or animals

DECOMPOSER: an organism that breaks down dead plants and animals

WHAT IS A MANGROVE?

Moreton Bay is home to seven different species of mangrove.

How are mangrove trees different to most other trees?

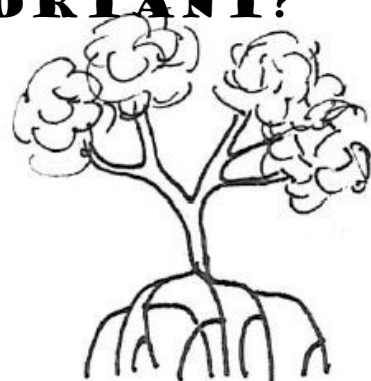
1.
2.
3.

HOW ARE MANGROVES IMPORTANT?

Let's explore the mangroves and investigate how they are important. Throughout this investigation, document three main ways you think mangroves are important.

Use the three boxes below to record your reasons.

Come, follow us on a virtual exploration!



Reason 1

Reason 2

Reason 3

MANGROVES PROTECT SHORELINE

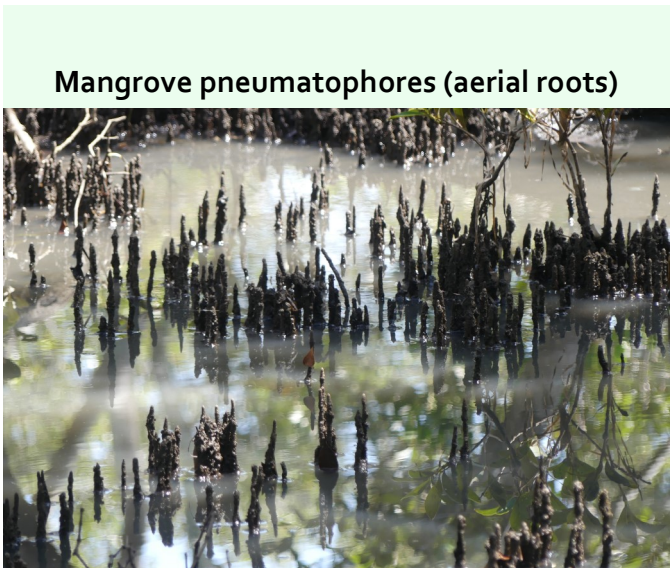
Compare coastlines A and B, explain what would happen to each coastline if a storm coming from the ocean were to hit.



MANGROVES KEEP WATER CLEAR

Have you ever noticed how muddy mangroves are?
Explain why is this the case (draw or write).

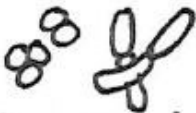
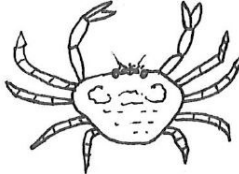


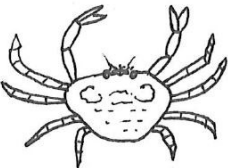

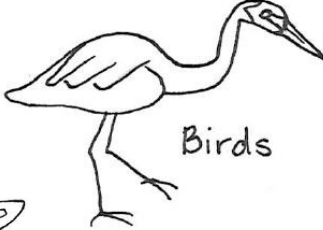
A large empty rectangular box with a green border, intended for a student to draw or write an explanation.

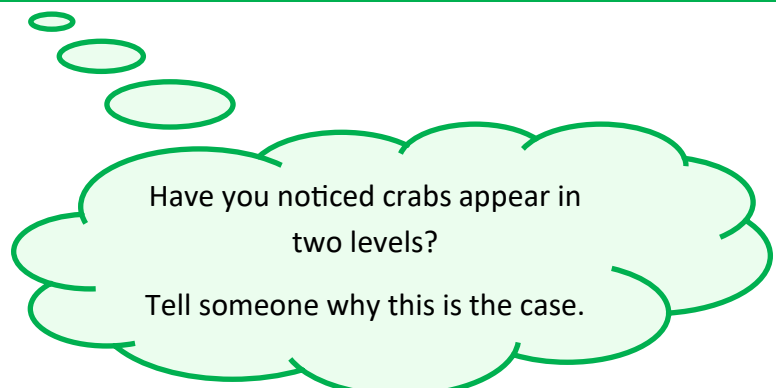


MANGROVES PROVIDE HABITAT FOR ANIMALS

Watch the video to complete this table.

1. Circle the animals you see living in a mangrove habitat
2. Label each row—Decomposers, Producers, Consumers (refer to glossary)
3. Connect, using a line, organisms that feed on each other

<div></div>	<div> Bacteria</div>	<div> Crab</div>	<div> Worm</div>
<div></div>	<div> Mangroves</div>		
<div></div>	<div> Crab</div>	<div> Fish</div>	<div> Birds</div>

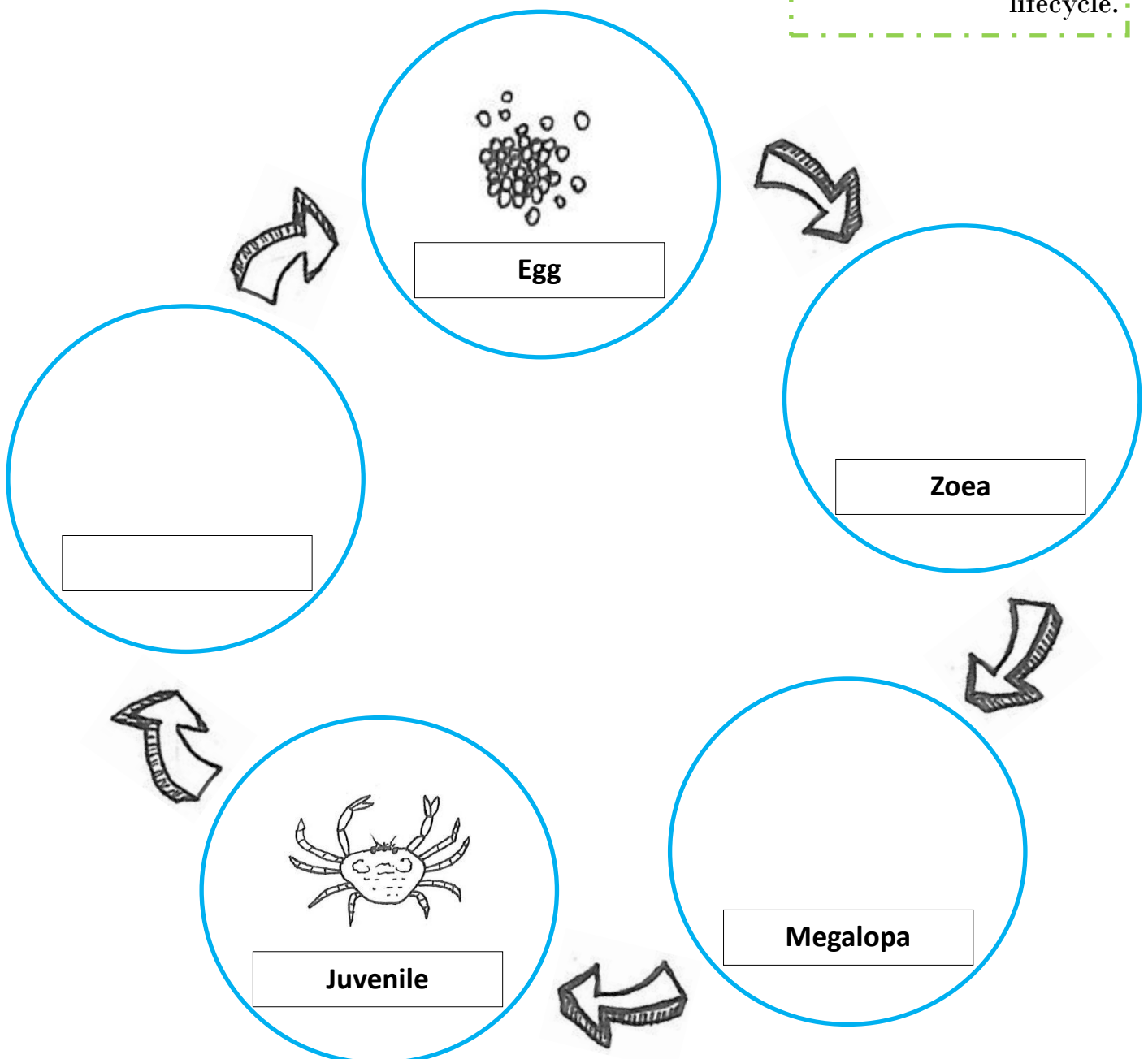
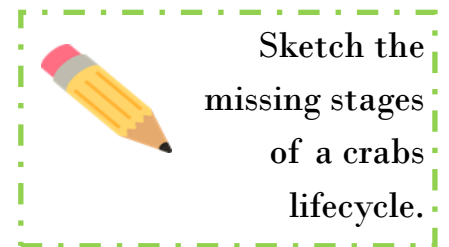


PLANKTON

What is Plankton?

Watch the video, and use the plankton identification guide to sketch the missing stages of a crab's lifecycle.

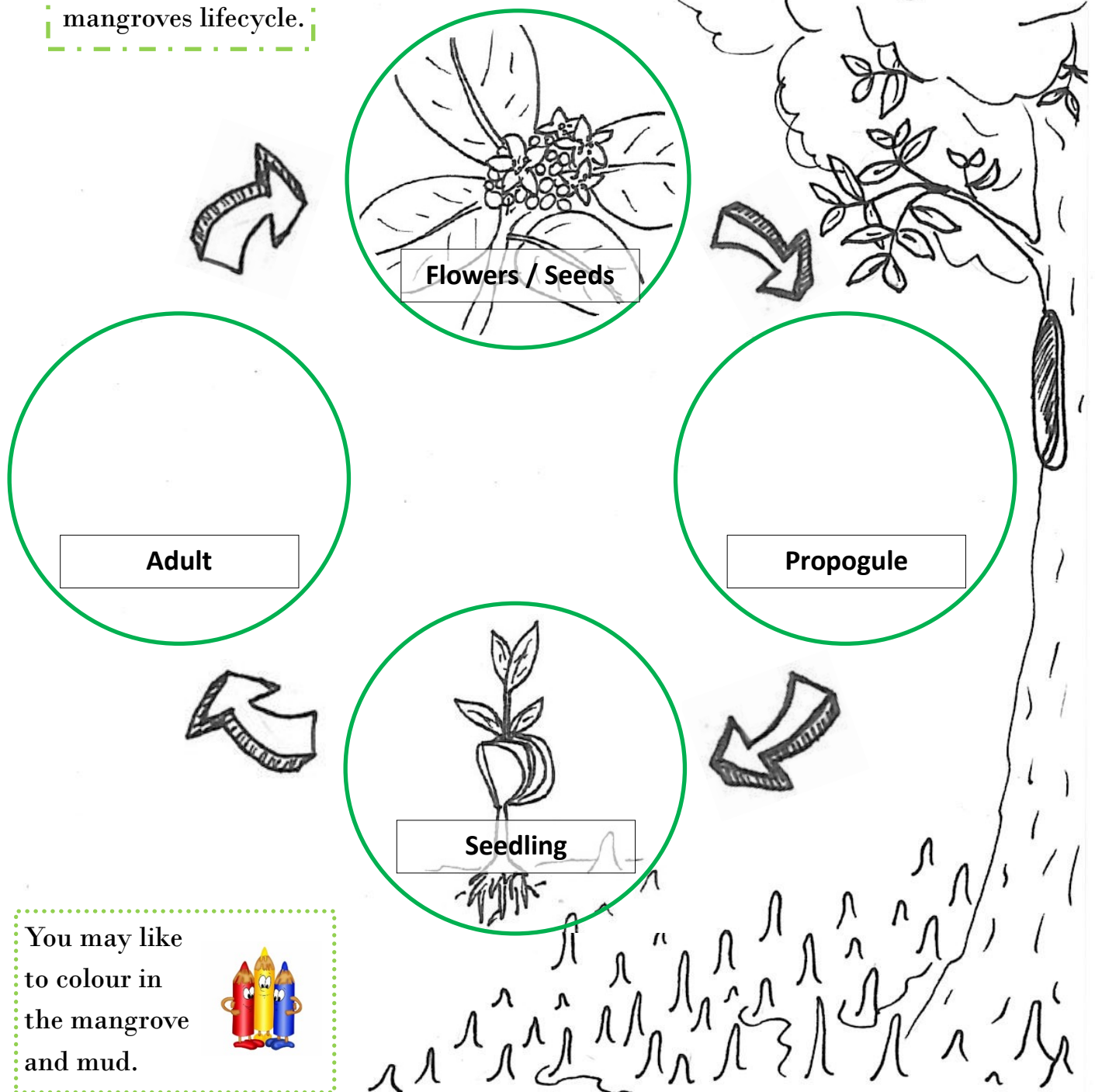
LIFE CYCLE OF A CRAB



LIFE CYCLE OF A MANGROVE



Sketch the
missing
stages of a
mangroves lifecycle.

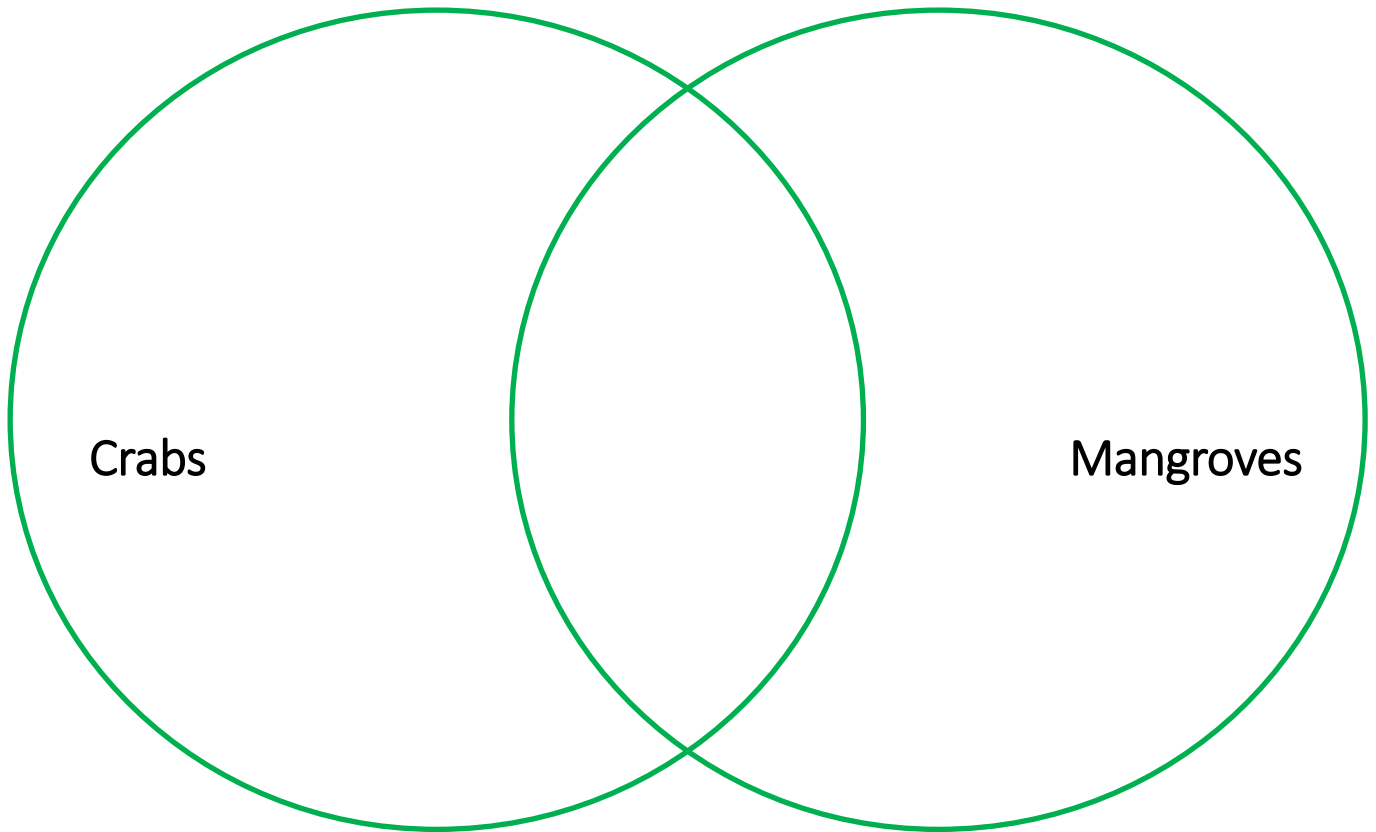


You may like
to colour in
the mangrove
and mud.



COMPARING LIFECYCLES

Compare how mangrove and crab lifecycles are similar and different. Use the Venn diagram below, adding the similarities in the overlap area.



INTERCONNECTIONS

Complete these statements. In an ecosystem, plants and animals are Interconnected.

Crabs help mangroves by

.....

Mangroves help crabs by

.....

Nearly 70% of the fish, prawns and crabs we eat are dependent on mangroves...for at least part of their lifecycle.

*Wild Guide to Moreton Bay,
Queensland Museum.*

Read the quote (left). If mangroves are removed, explain one impact this would have on fish, prawns and crabs?

.....
.....
.....
.....

What can you do to be a champion for the mangroves in Moreton Bay?

How about writing a letter back to the editor.

LETTER TO THE EDITOR



ARE BAY VIEWS MORE IMPORTANT THAN MANGROVES?

Use information throughout this booklet to help you write this letter. Hint: reasons are on page 5.

Date

Your name

Letter title

(mention original letter, date, person and topic)

I am writing to you in response to....

State your opinion
(Are Bay views more important than mangroves?)

I believe that...

State evidence,
reason 1

This is because....

State evidence,
reason 2

Furthermore...

(refer to original article) (e.g. future action)

I hope

Sign off

Sincerely,