

# Lama Lama junior rangers



## Marvellous mangroves



LAMA LAMA  
LAND TRUST

YINTJINGGA  
Aboriginal Corporation



SUPPORT MARVELLOUS  
FISH LIKE ME THAT  
CAN LIVE OUT OF  
WATER!

MARVELLOUS  
FOR HIDING FROM  
FISH BIGGER THAN  
ME!

MARVELLOUS AMOUNTS  
OF FOOD AND  
MARVELLOUS FOR HIDING  
FROM CROCS!

MARVELLOUS HABITATS THAT PROTECT  
THE LAND (WHERE MY NEST IS) FROM  
BIG STORMS AND CYCLONES!

This activity booklet belongs to Ranger \_\_\_\_\_

Date started \_\_\_\_\_ Date completed \_\_\_\_\_

# THEME 1: Mangroves

## Activity 1.1 marvellous mangroves

Resource type: Information and activity booklet

© Jabiru Environmental 2015

This activity booklet '1.1 marvellous mangroves' is a part of the Yintjingga Aboriginal Corporation's Junior Ranger Resource Development Project 2015, coordinated through the Lama Lama Ranger Program. It contributes to Theme 1 (Mangroves). This booklet was designed and illustrated by Jabiru Environmental following a series of workshops and on-country visits with the Yintjingga Aboriginal Corporation (particularly Ms Alison Liddy & Ms Elaine Liddy) to identify the Lama Lama Junior Ranger Learning priorities.

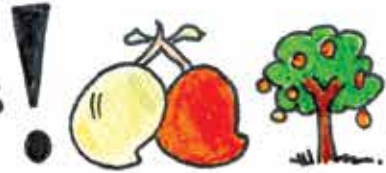
The Umpithamu language names presented in this activity booklet were obtained from a dictionary that was compiled by Dr Jean-Christophe Verstrate, on the basis of work with Mrs Florrie Bassani, and earlier recordings made by Professor Bruce Rigsby with Ms Joan Liddy. Ms Elaine Liddy assisted with the dictionary entries and provided additional cultural information.

This activity booklet and its contents cannot be copied, shared or distributed without the permission of the Lama Lama people and Dr. Helen Penrose.



# What are mangroves ?

Not to be confused with mangoes !



**Mangroves** are trees that grow in the **intertidal** area (the area between land and sea) in coastal rivers, estuaries, bays and also on near-shore islands (such as Marpa).

**Mangroves** are the only trees in the world that are able to live in soft, salty, low oxygen (muddy) soils !

## How can mangroves happily live in mud and saltwater?

Most trees have their roots hidden below the ground...

but **mangroves** have above-ground roots as well !

These above-ground roots are called **pneumatophores** (new-mat-a-fours). These are spongy roots that have small holes in the bark so that oxygen from the air can get to the below-ground root system.

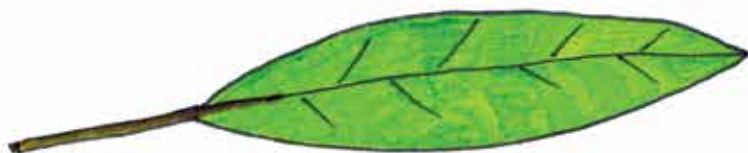


above-ground  
'stilt' or 'prop' type roots



above-ground  
'peg' type roots

**Mangrove** leaves are special too ! They help the **mangrove** to live in saltwater by storing the salt in the leaves or by special leaf pores (like the pores on your skin) where extra salt comes out in salt crystals. As well as getting rid of salt, the leaves also have clever tricks to make sure that freshwater is kept within the tree. How? by making their leaf pores small and also by moving their leaves to avoid the harsh, midday sun (just like we do when we move with the shade under a tree on a hot day !). Did you know that leaves can move themselves away from

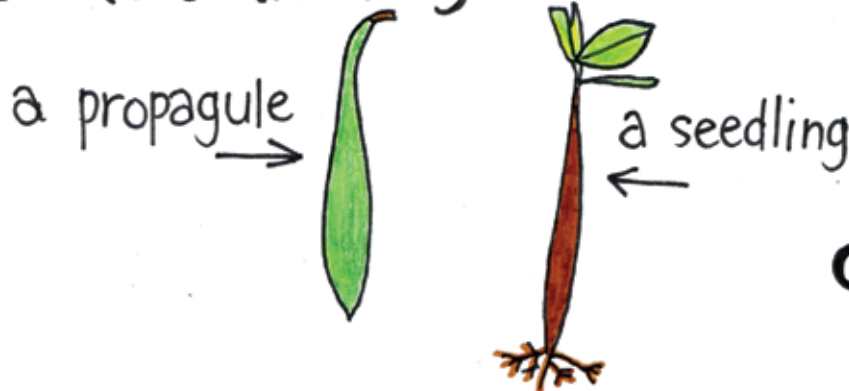


the sun  
(Wunga) ?



**Mangroves** also have special seeds!

Unlike most plants whose seeds grow in the soil, mangrove seeds can form young seedlings while they are still attached to the tree—these are called 'propagules'. If the water is small (**Ngoki eentinti**), or 'low tide', when the propagule is ready to fall from the mangrove tree, it will settle into the dry mud and grow. If the water big (**Ngoki yawul**), then the propagule falls into the water and floats with the tides and currents until it finds a good soft sandy or muddy place to settle and grow into a mangrove tree.



A propagule becomes a young mangrove tree.  
Can you see how?

### WHY SHOULD WE LOOK AFTER OUR MANGROVES?

Have a think about what mangroves mean to you, and why they might be important. In the space below you can write or draw your thoughts on this:—

A large rectangular box with a green border and purple corners, intended for writing or drawing thoughts about mangroves.

# Mangroves are marvellous because...

Mangrove leaves, seeds and seedlings fall into the saltwater and are eaten fresh by animals like crabs and even green turtles!

green turtle  
(Ikarranthi)



grey mangrove seed



fresh leaf



dead leaf



grapsid crab

Old rotting leaves (called detritus) are also very important as they provide food for animals like prawns, crabs and some fish.



little mullet  
(Ngolpi)



saltwater prawn  
(Mothen)

Mangrove roots are excellent habitats for these animals and many others because they provide good hiding spots from the animals that would like to eat them! Even types of seaweed (algae) grow on mangrove roots and the pneumatophores providing more food for animals!

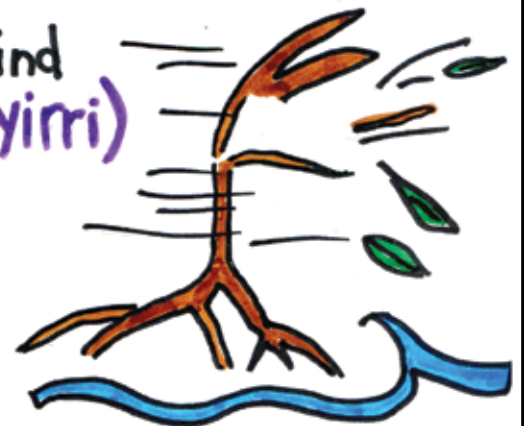


rain  
(Weeren)



cyclone

wind  
(AKYirri)



Mangrove trees also protect the coast (and the people living there!) from big winds and waves. There are so many more marvellous things about mangroves... this is just the start!

# Lama Lama mangroves

Did you know... that there are at least **26** different species of mangrove in Lama Lama country?

Australia has **41** species of mangrove in total.

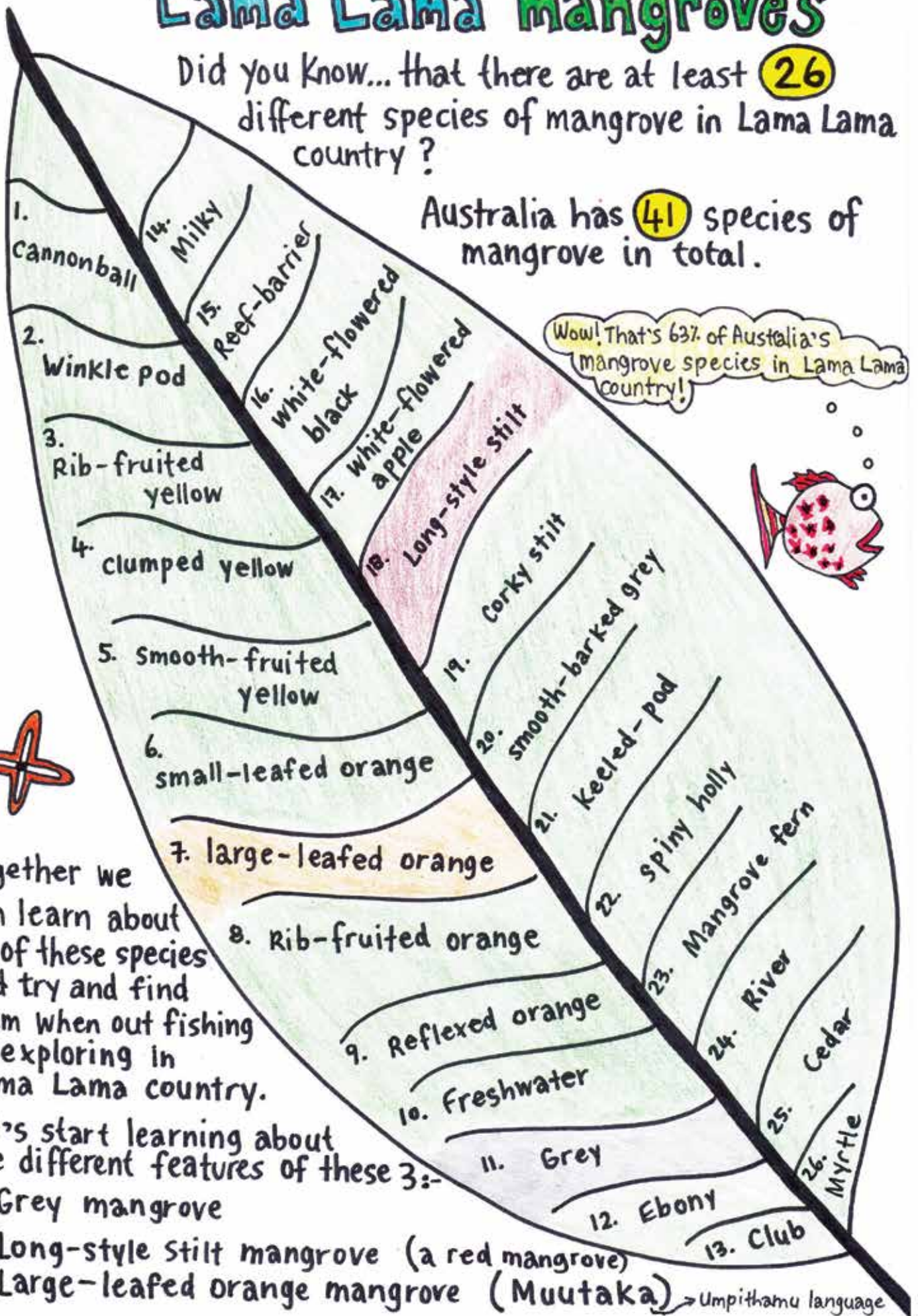
Wow! That's 63% of Australia's mangrove species in Lama Lama country!



Together we can learn about all of these species and try and find them when out fishing or exploring in Lama Lama country.

Let's start learning about the different features of these 3:-

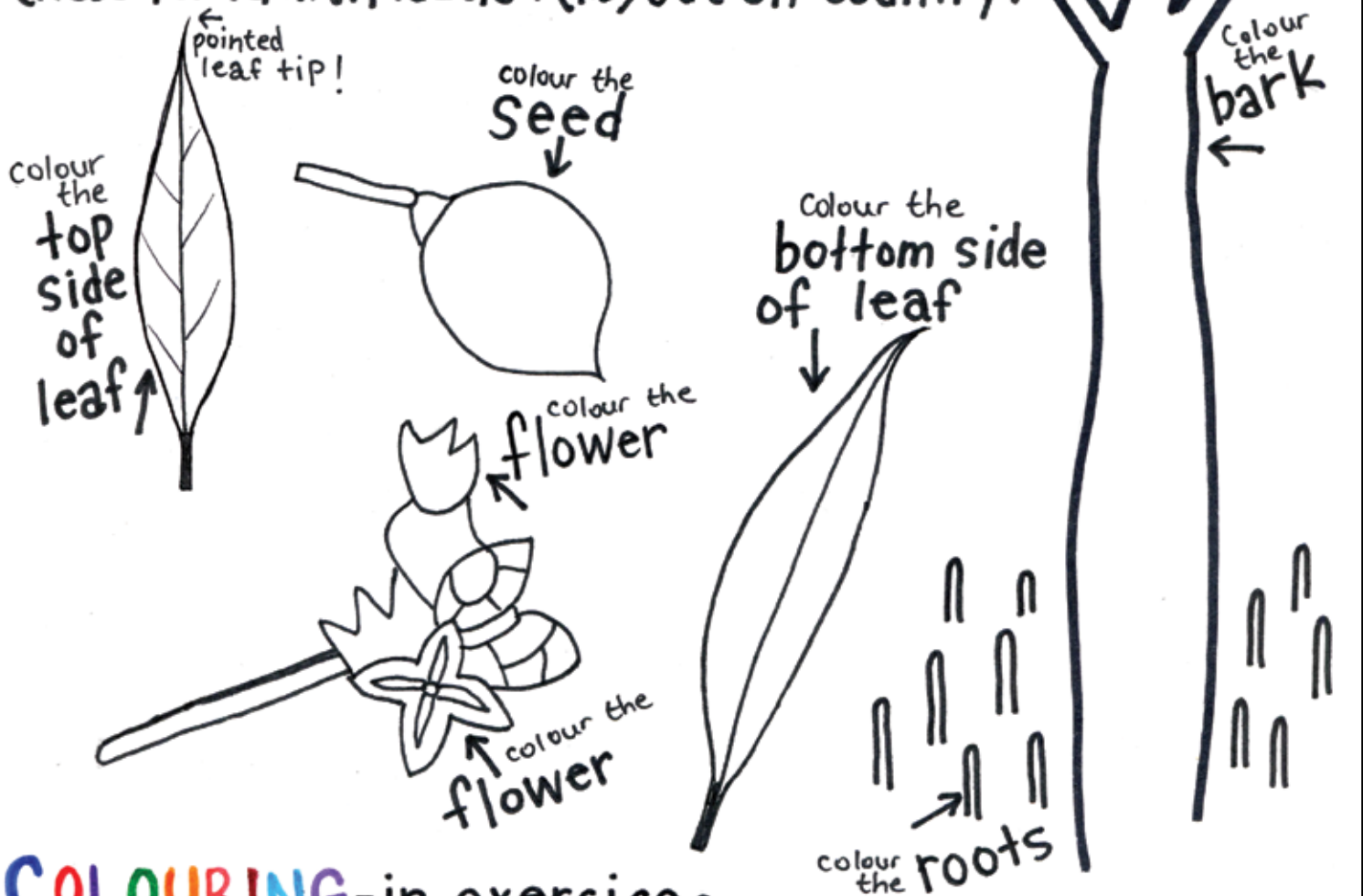
- ① Grey mangrove
- ② Long-style stilt mangrove (a red mangrove)
- ③ Large-leafed orange mangrove (Muutaka) → Umpithamu language



# Grey mangrove identification

Below are the different parts of a grey mangrove tree.

We need to look closely at these for identification (I.D) out on country.



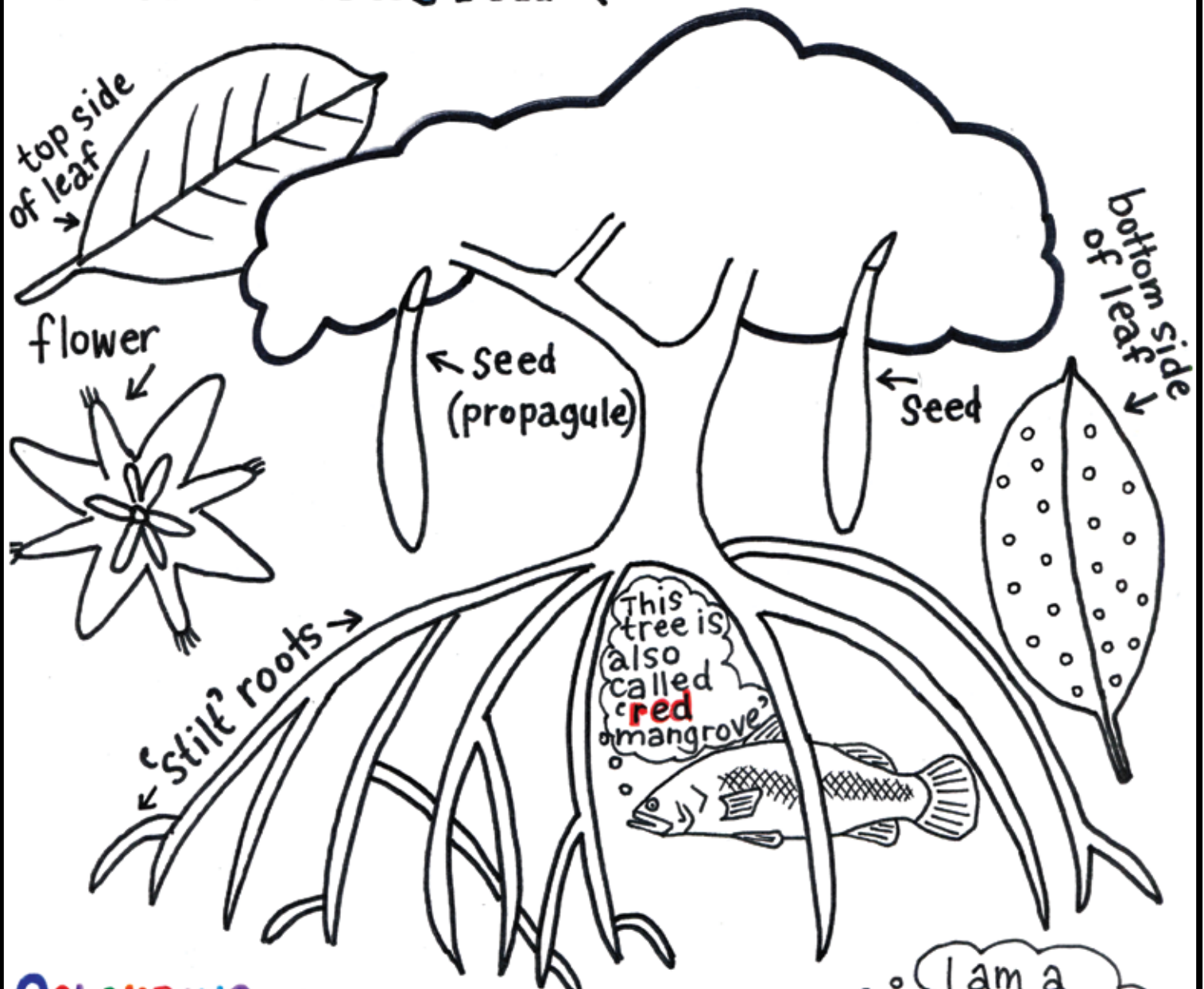
## COLOURING-in exercise:-

Tick ✓ the box as you colour in the mangrove tree parts.

- bark is mostly grey but little bit white or green.
- seeds are light green.
- flowers are light orange.
- roots are brown.
- leaves are light green on top side.
- leaves are grey on bottom side.



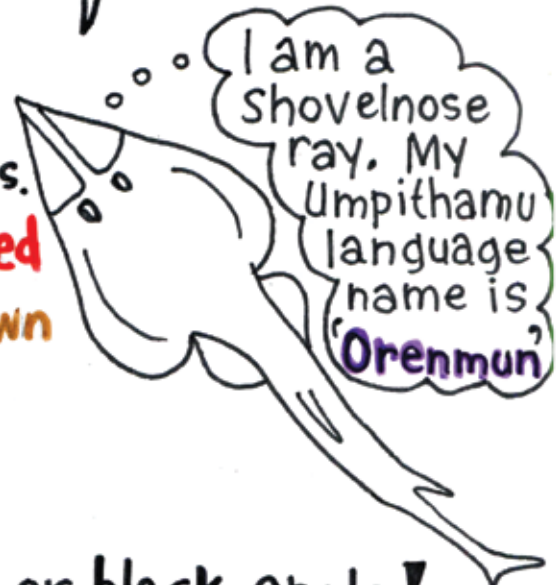
# Long-style stilt mangrove identification (i.d)



## COLOURING - in exercise :-

Tick ✓ the box as you colour in the tree parts.

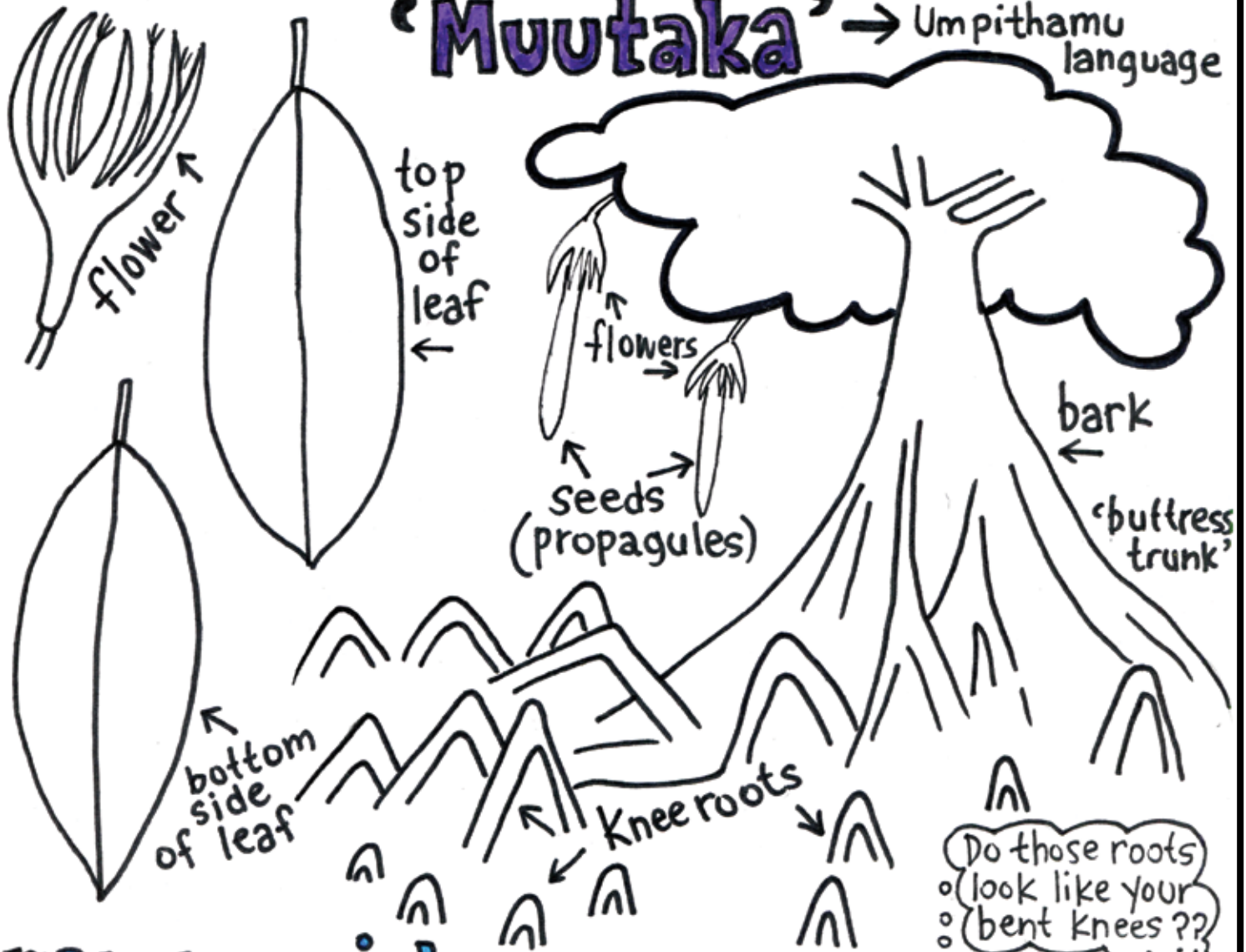
- bark can be **brown** to dark **grey** or **red**
- seeds (propagules) can be **green**/**brown**
- flowers are **yellow** and white
- leaves are dark **green** on top side
- leaves are light **green** with **brown** or black spots!  
(on the bottom side only...)





# Large-leafed orange mangrove

'Muutaka' → Umpithamu language



## mangrove i.d

**COLOURING** - in exercise :-

Tick ✓ the box as you colour in...

- Bark can be brown to dark grey
- Seeds (propagules) are green
- flowers are red or bright orange
- leaves are dark green on top side
- leaves are light green on bottom (underneath) side



The propagules are used to make mangrove porridge!



↑  
makes porridge !!

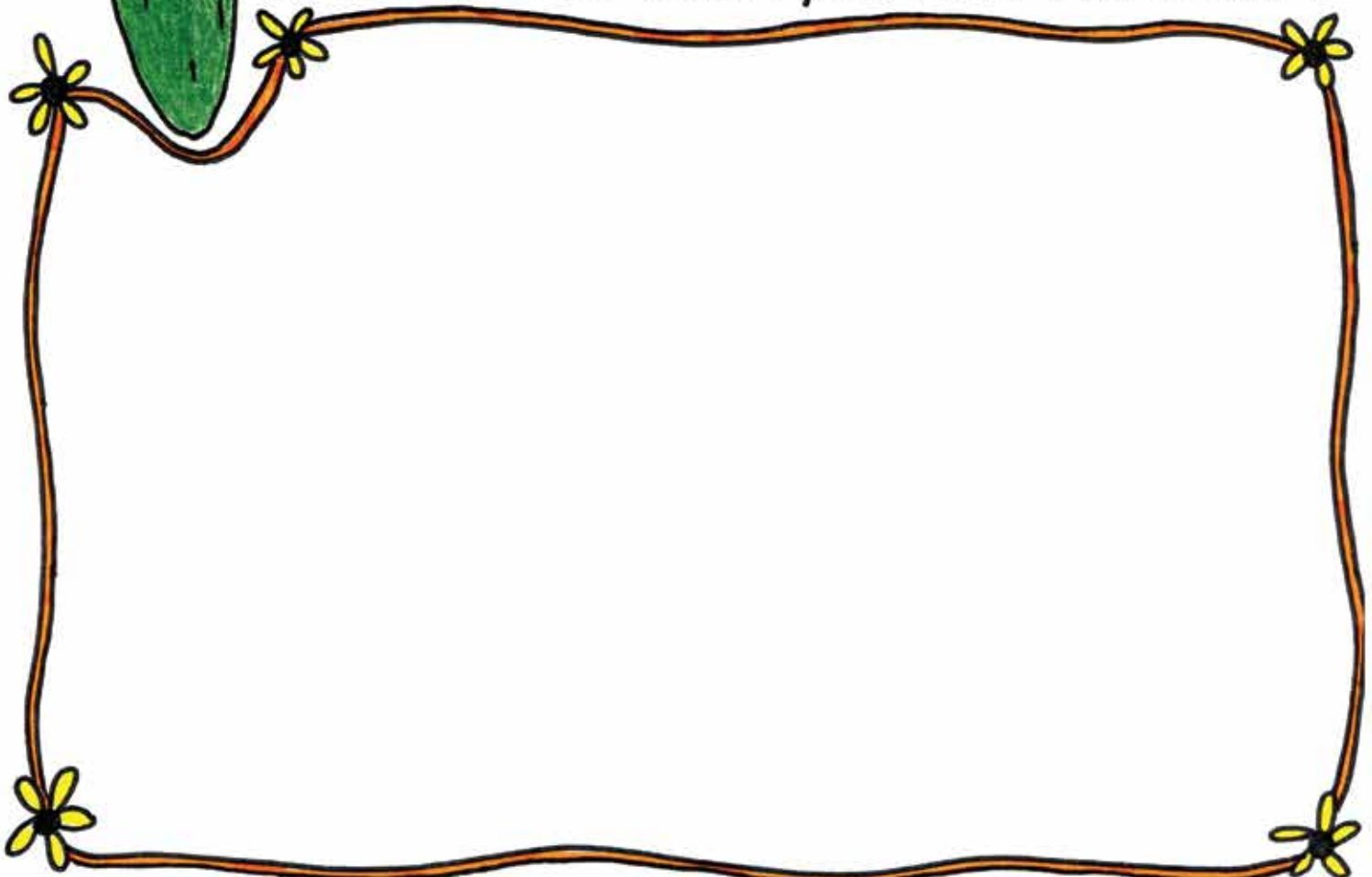
# How to make mangrove porridge

For this activity you need to go and yarn with an Aunty to find out how to make Lama Lama mangrove porridge.

Mangrove seed pods (**Atithal**) were collected from the Large-leaved orange mangrove (**Mutaka**).



Write or draw what you find out below :-



# Mangrove word puzzle

Look at the words listed below and find them hidden in the puzzle

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

- SALTWATER
- SPECIES
- MARPA
- WUNGA (SUN)
- FISH
- MANGROVE
- MUUTAKA  
(LARGE-LEAFED  
ORANGE MANGROVE)
- tide
- BARK
- PROPAGULE
- FOOD
- FLOWER
- CRAB
- LEAVES
- CYCLONE
- SEEDS
- PNEUMATOPHORE
- MUD
- CROC
- PORRIDGE
- COAST

# mangrove word match

In this activity, match the word with its meaning!

## WORD

INTERTIDAL

MANGROVE

PNEUMATOPHORE 

WUNGA 

SPECIES

SEEDLING

ORENMUN

DETRITUS 

MUUTAKA

ATITHAL

NGOLPI 

PROPAGULE 

NGOKI YAWUL

NGOKI EENTINTI

ALGAE


IKARRANTHI


 WEEREN


MOTHEN


 AYKIRRI


## MEANING (definition)


 Umpithamu word for large-leaved orange mangrove


 Umpithamu word for 'shovelnose ray'


 Umpithamu word for 'water big' (high tide)


 A young plant

 Seeds or pods from Muutaka that you can make mangrove porridge from


 Marine plants that are found in the sea, including on mangrove roots


 Umpithamu word for 'rain'


 Umpithamu word for 'saltwater prawn'


 Trees that can live and grow in the area between land and sea


 Above-ground roots special to mangroves


 A young mangrove seedling that grows while still attached to the tree


 Umpithamu word for 'water small' (low tide)


 Umpithamu word for 'sun'


 Dead or rotting mangrove leaves that provide food for some animals

 Umpithamu word for 'green turtle'

 Umpithamu word for 'little mullet'

 The area between high and low tide

 Umpithamu word for 'wind'

 A scientific word meaning a group of plants (or animals) that can produce offspring together (reproduce or breed).