MURRAYLANDS AND RIVERLAND

ACTIVITY BOOK

LANDSCAPE SOUTH AUSTRALIA
MURRAYLANDS AND RIVERLAND

SOIL IS REALLY IMPORTANT

What is soil?

Soil is the top layer of the Earth where plants grow. It's made of tiny bits of rock, minerals, and organic matter like dead plants and animals. Soil gives plants a place to grow by holding water and nutrients they need to survive. Without soil, we wouldn't have farms, gardens, or healthy ecosystems. It's a big part of what keeps our planet alive and thriving!

Why is soil important?

Soil is super important for life everywhere—not just in Australia, but all over the world!

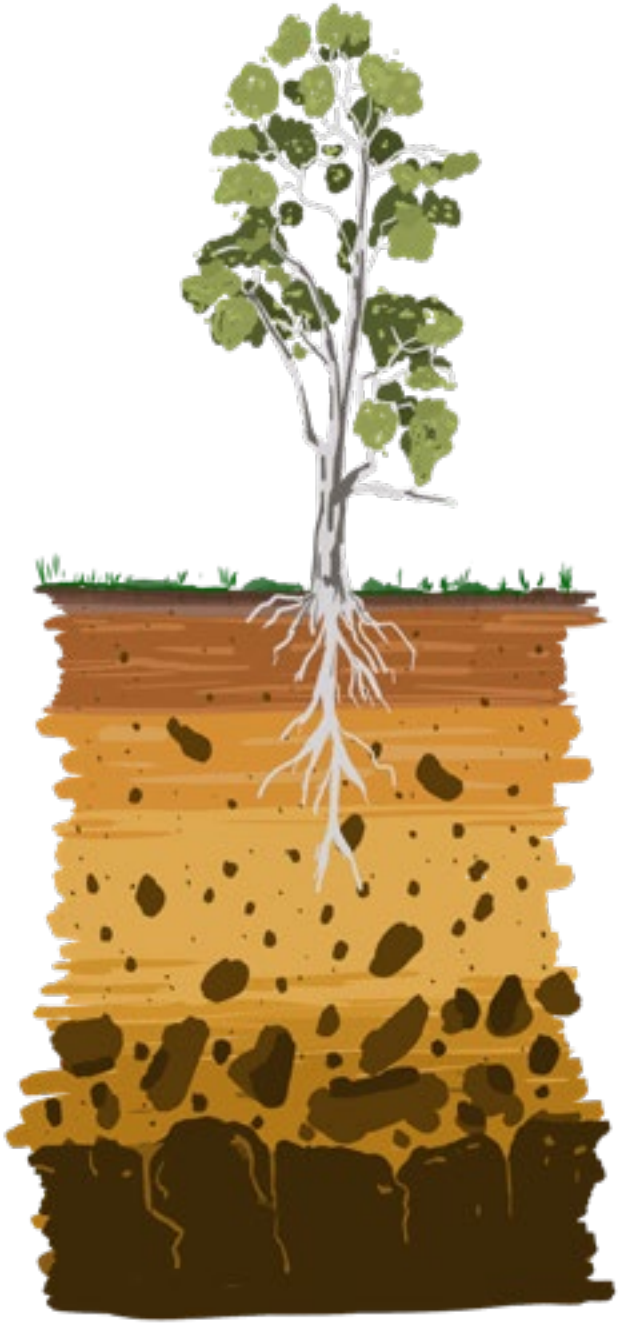
Here's why

Our food grows in soil: each year, farmers take care of their soil by planting seeds, adding fertiliser, and harvesting crops. These crops help feed people around the world.

Soil helps gardeners too: whether it's flowers or vegetables, soil is essential for gardening. Gardeners, like farmers, need to keep their soil healthy by making sure it's well-drained and full of nutrients.

Plants and trees need soil to grow: they give us oxygen, shade, and homes for animals.

Healthy soil keeps the planet healthy: soil helps clean water, store carbon, and support wildlife.



O (humus or organic)
A (topsoil)
E (eluviated)
B (subsoil)
C (regolith)
R (bedrock)

DID YOU KNOW?

All animals that live in the soil have a job to do:

- Building soil structure
- Nutrient cycling
- Protecting plants against diseases and pests

FUN FACTS ABOUT SOIL

- Soil is nearly half air and water
- There are thousands of soil types
- A teaspoon of soil contains more creatures than there are people on the whole planet
- Soils forms really slowly, so we have to look after it.

MAKE YOUR OWN EDIBLE SOIL PROFILE

Equipment and materials needed:

- Plastic cups
- Popcorn for the **R** (bedrock)
- Sliced rock melon for the **B** (subsoil)
- Sliced apple for the **E** (eluviated horizon)
- Sliced watermelon for the **A** (topsoil)
- Green and brown coconut for grass and twigs for the **O** (humus or organic)

Build your edible profile from the bottom of the cup up to the top.

Now it's time to eat it!

PEST ANIMALS IN OUR REGION

Did you know some animals can cause big problems for our land, the wildlife, and people? These are called pest animals. They harm the environment, make it harder for native plants and animals to survive, and can even affect the food we grow.

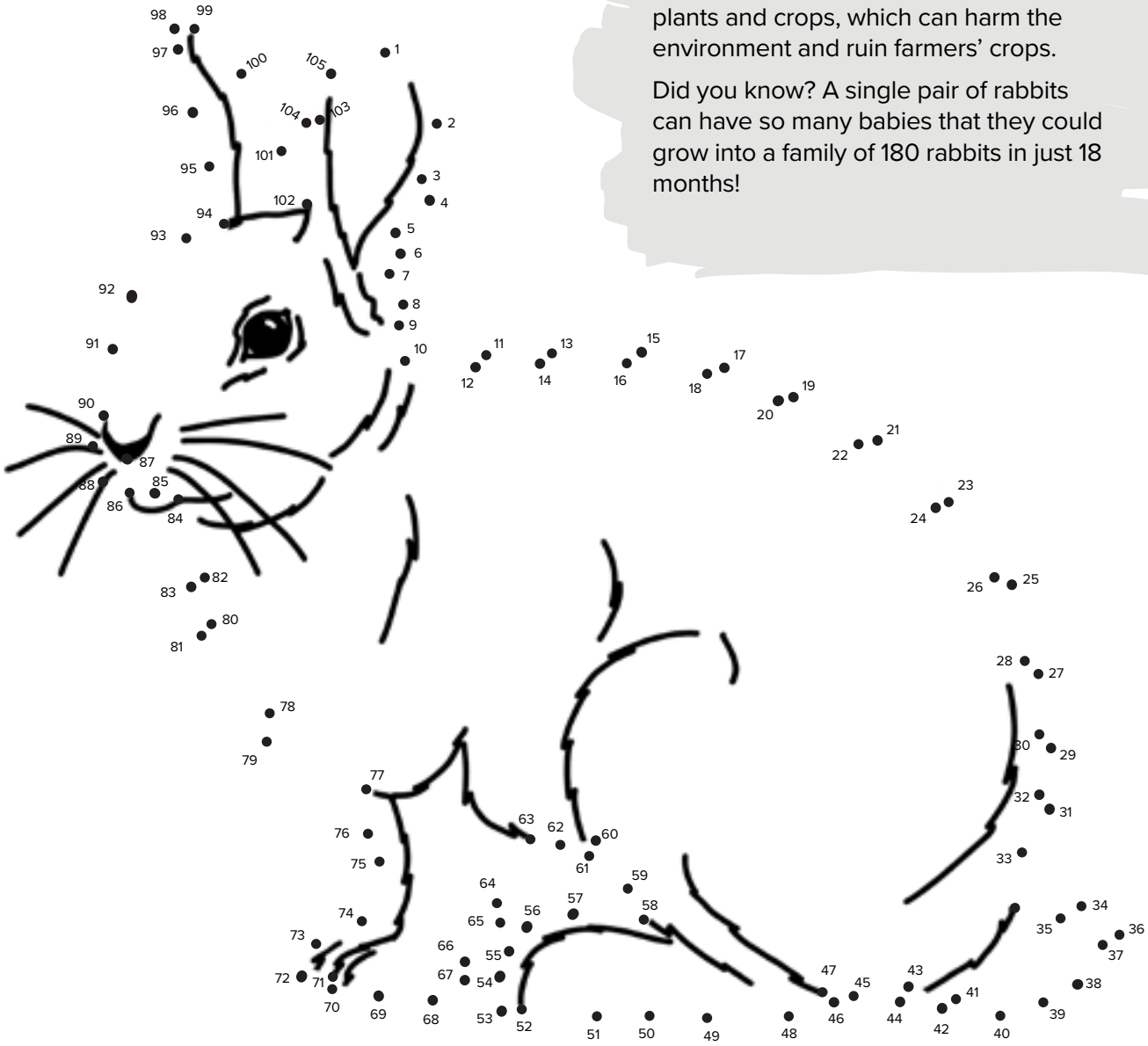
The Murraylands and Riverland Landscape Board works with local land managers to help reduce pest animals and protect our region's natural beauty.

Connect the dots to reveal 2 of the pesky pests and learn why it's important to manage them.

WHY ARE RABBITS A PROBLEM?

Rabbits love to eat! They munch on native plants and crops, which can harm the environment and ruin farmers' crops.

Did you know? A single pair of rabbits can have so many babies that they could grow into a family of 180 rabbits in just 18 months!



WHY ARE FOXES A PROBLEM?

Foxes are very sneaky. They hunt small animals like birds and lizards, putting native wildlife in danger. They can even steal chickens!

They are fast and clever, making them tricky to catch!

EVERY DROP COUNTS!

Water is super important for all living things! We use it for drinking, growing food, and even having fun. But did you know South Australia is one of the driest places in the world? That means we have to be smart about how we use water.

A lot of the water we use comes from the River Murray, but we also collect rain in tanks and dams or pump water from underground. Every drop counts, so it's important not to waste it.

It's surprising how many buckets of water we use every day for things and that's why it's so important to save water where we can.

Look on the next page to see how many buckets of water it takes for some normal everyday activities!

If you leave the tap running while brushing you teeth, you use 1 bucket per minute.

Flushing a dual-flush toilet 5 times a day uses 3 buckets.

Washing you hands 6 times a day uses 3 buckets.

When you have a shower, you use 4 buckets per minute.

To fill a bath you would need 20 buckets.

A dripping tap can waste up to 40 buckets of water a day!

WHAT IS A HABITAT?

A habitat is a word that describes parts of the natural environment where living things call home! Rivers are habitats for fish and frogs, while trees are habitats for birds. A river's habitat can be healthy or unhealthy, depending on the conditions.

The words below describe what surrounds a river's habitat and how it affects the living things that call it home.

Answers on page 22!

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

Algae
Banks
Creek
Erode
Flows
Leaflitter
Logs
Oxygen
Plankton
Pool
River
Rocks
Sediment
Shelter
Snag
Stable

HEALTHY RIVER HABITAT SCENES

Compare and colour the healthy and unhealthy river habitat scenes.

RIPARIAN ZONE

Healthy

Unhealthy

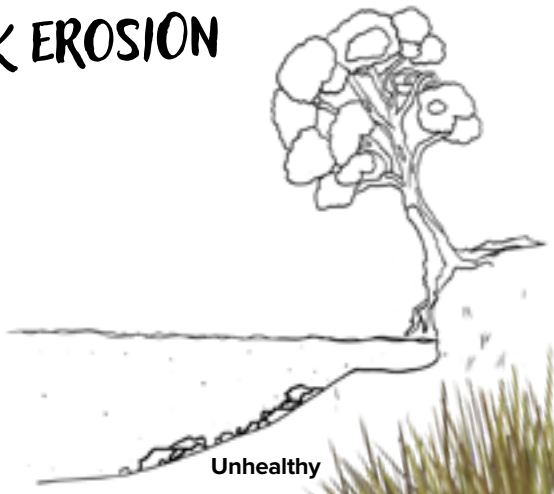
INSTREAM COVER

Healthy

Unhealthy

BANK EROSION

Healthy



Unhealthy

BUILD AN INSECT HOTEL

Did you know there are about 10 million species of insects in the world? And they all need somewhere to live!

Most of these tiny creatures are harmless, and many are helpful, playing important roles in keeping the environment healthy. By creating insect hotels, you can provide a safe habitat for these fascinating creatures while learning about the biodiversity in your own backyard.

Insect hotels are structures designed to give insects a place to shelter, hibernate, or lay their eggs. These can be as simple or as creative as you like, and building one is a fun way to recycle materials while supporting local wildlife.

Materials

Use what you have! Insect hotels are best made with recyclables and natural materials, such as bottle caps, tubes, bamboo, sticks, straw, pipes, bricks, or scrap timber. The design can vary depending on the materials available.

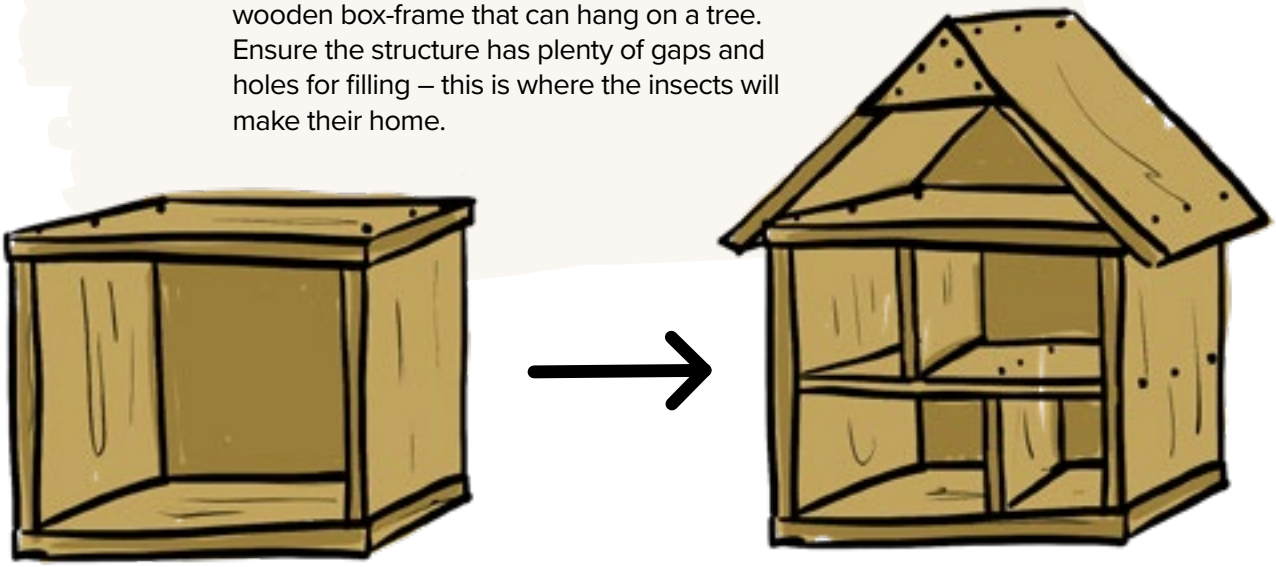
Equipment

You might need tools like a saw, drill, hammer, nails, or a hot glue gun, depending on your design.

BEST YOU GET HELP FROM AN ADULT FOR THIS ONE!

1. CREATE THE STRUCTURE

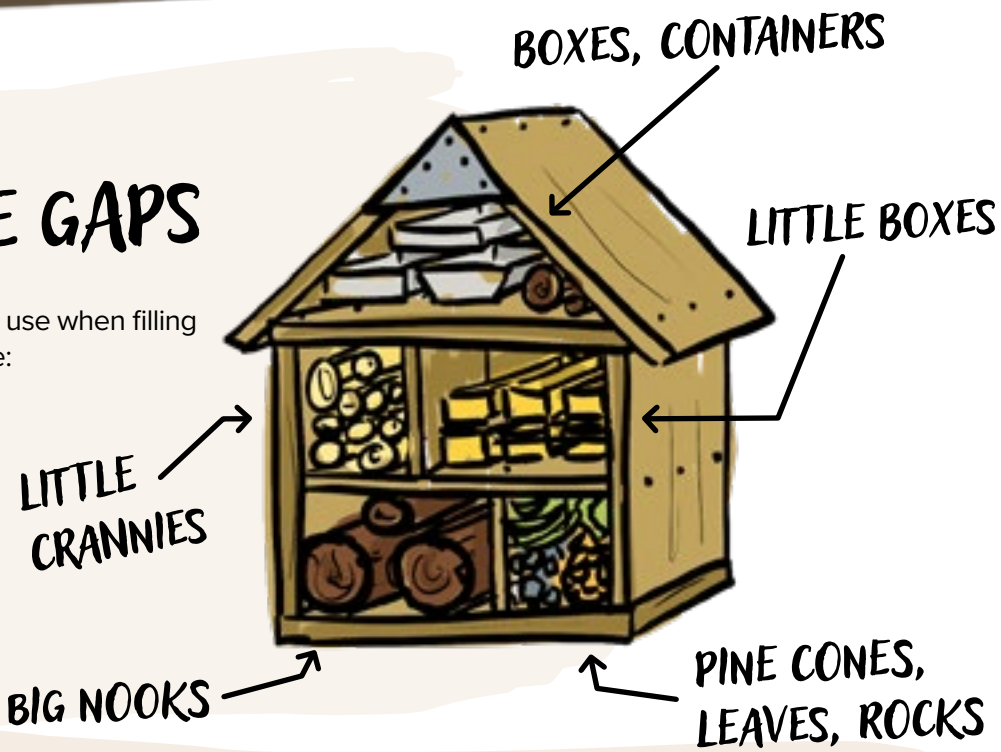
Your insect hotel can take many shapes and sizes. You might use recycled pallets to build a large, free-standing hotel or create a smaller wooden box-frame that can hang on a tree. Ensure the structure has plenty of gaps and holes for filling – this is where the insects will make their home.



2. FILL THE GAPS

Here are some materials to use when filling the spaces in your structure:

- Straw and hay
- Dry leaves
- Loose bark
- Corrugated cardboard
- Dry sticks or leaves



3. WHERE TO PLACE YOUR INSECT HOTEL?

For the best results, place your insect hotel:

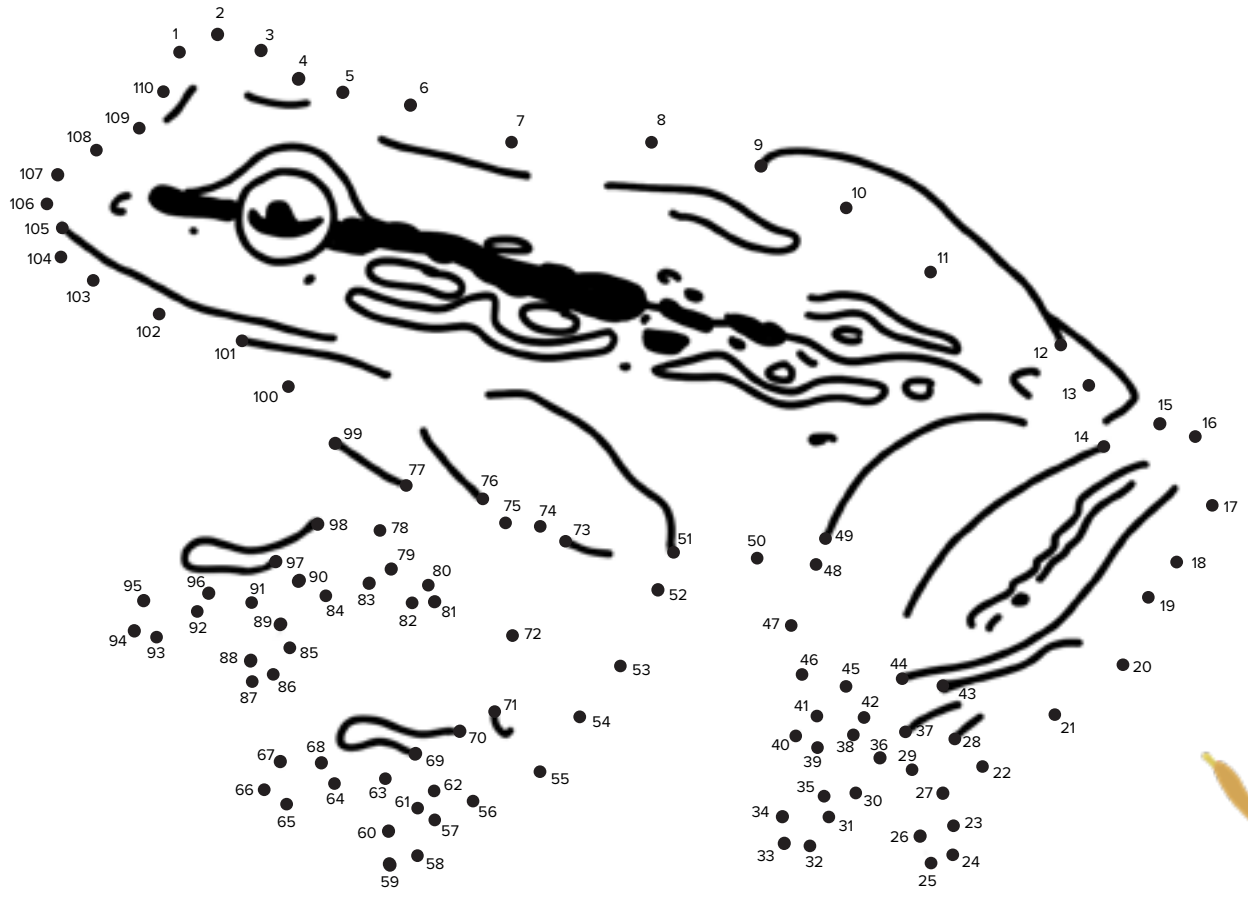
- In a cool, damp area like semi-shade, near a bush or under a tree.
- Close to other wildlife features like hedges, shrubs, or a pond, so creatures can easily find it.
- On a flat, sturdy surface to support the structure, especially if it's large and heavy.

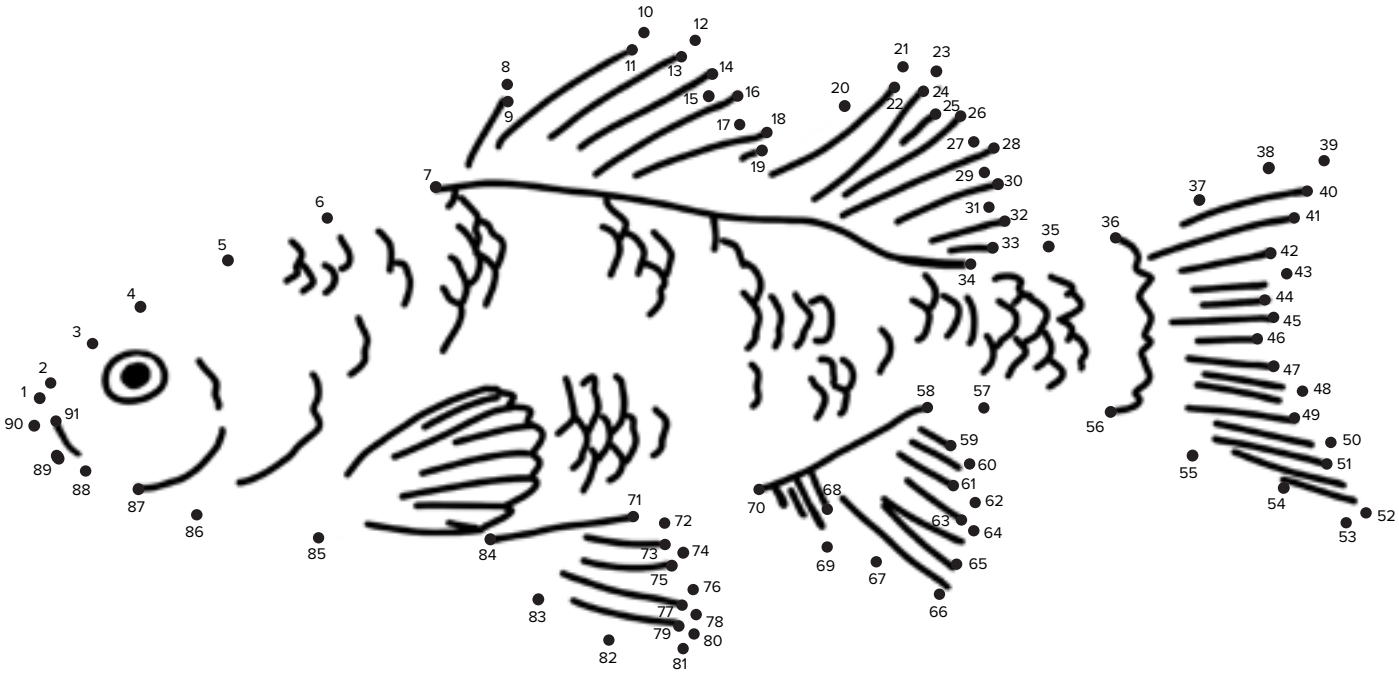
You can use a bucket too! Just cut a piece out of one side and keep the lid for the roof.

THREATENED SPECIES IN OUR REGION

Southern bell frog

- Southern bell frogs are vulnerable, because there aren't many of them left. This is because of river regulation, lack of natural flooding, habitat loss, competing species, and predators like carp that eat their eggs and tadpoles.
- These frogs are known for being some of the most colourful in our region. With their bright green skin and beautiful gold and bronze patterns, they're easy to spot!
- Southern bell frogs love wetlands and rising water levels where they can find plenty of plants to hide in and safe places to lay their eggs.
- During the spring and summer breeding season, the males make a deep "wup-wup-wup" sound to say "hello" and attract females.
- As carnivores, these frogs enjoy eating insects, small fish, and even other frogs!

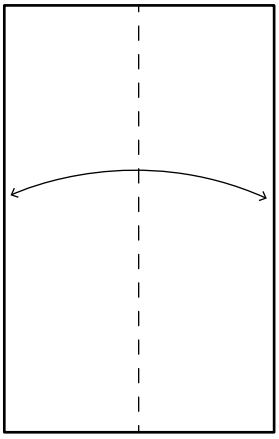




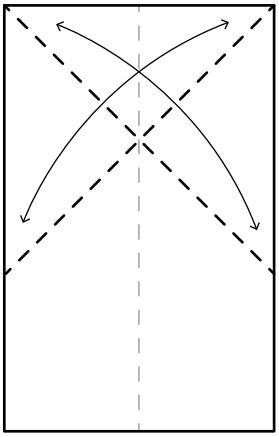
Yarra pygmy perch

- The Yarra pygmy perch is a small fish, growing to just 5-6 cm long!
- They like to hide among plants in the water, staying out of sight from larger predators.
- The Yarra pygmy perch disappeared from the wild in the Murray-Darling Basin due to habitat loss and predators, but it's being brought back through special conservation programs.
- Yarra pygmy perch play an important role in the ecosystem by eating tiny insects and helping balance the food chain.
- Thanks to the efforts of scientists, these fish are being reintroduced to their old homes in the River Murray, where they can once again swim freely in the wild.

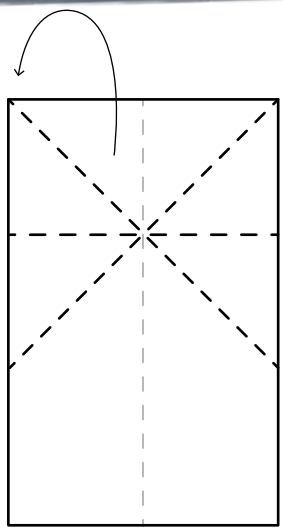
ORIGAMI FUN JUMPING FROG



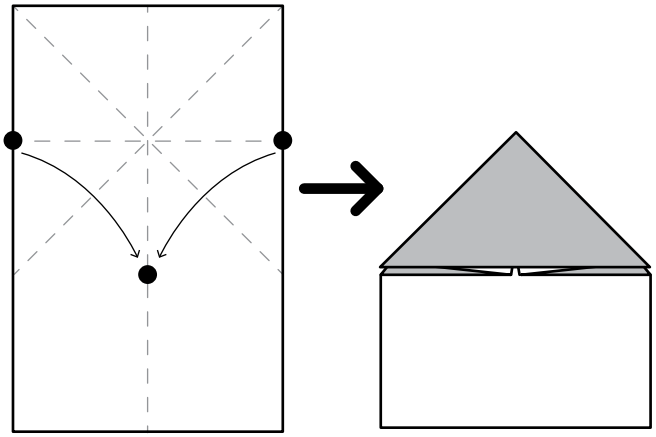
1. Start with a rectangular sheet of paper, white side up. Fold it in half, and open out again.



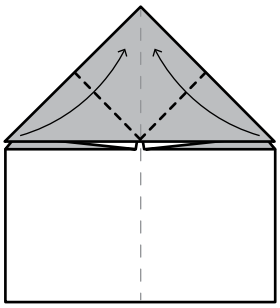
2. Fold both top corners to the opposite edge of the paper. Your creases should look like this.



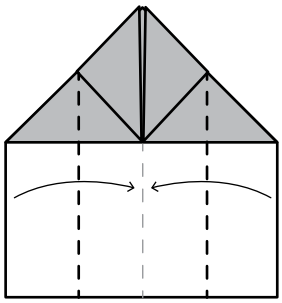
3. Where the diagonal creases meet in the middle, fold the paper backwards, crease well and open.



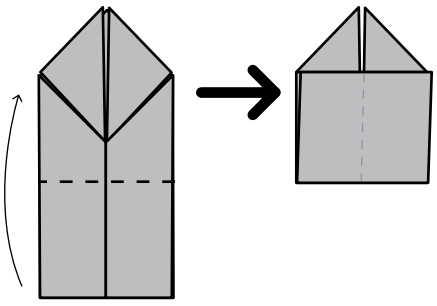
4. Hold the paper at the sides, bring these points down to the centre line, than flatten. The crease should do most of the work here!



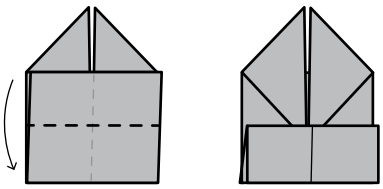
5. Fold the uppermost triangles up to the top point.



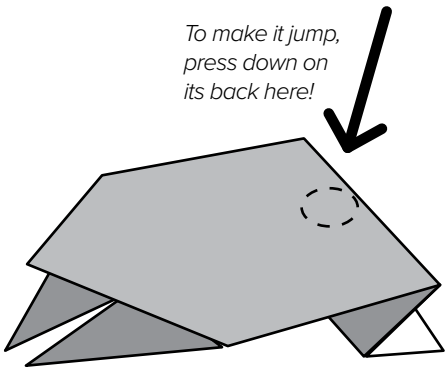
6. Fold sides in to the centre line.



7. Fold bottom of model upwards so the end sits in the centre of the top diamond.



8. Now fold the same part downwards, in half.



9. Turn over and your frog is finished!

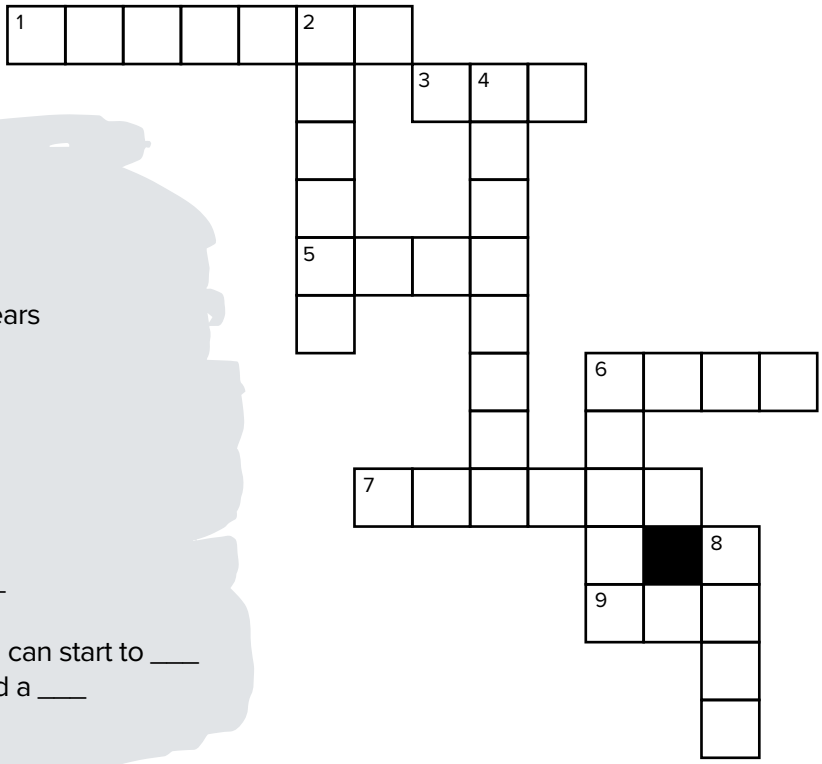
RABBITS

Rabbits might look cute and fluffy, but in Australia, they've caused huge problems for our environment. They were first brought over with the First Fleet in 1788, and since then, their numbers have exploded.

Rabbits eat native plants, damaging ecosystems and competing with native animals for food. They also dig burrows, which can destroy habitats and even take over the homes of native species.

One of the biggest problems? Rabbits breed incredibly fast! A single pair of rabbits can produce over 180 babies in just 18 months.

Answers on page 22!



Across

1. Rabbits live underground in ___
3. Rabbits on average live for ___ years
5. Rabbits have long ___
6. A male rabbit is called a ___
7. A young rabbit is called a ___
9. A female rabbit is called a ___

Down

2. A group of burrows is called a ___
4. Rabbits have excellent ___
6. From three months of age, rabbits can start to ___
8. In Australia, rabbits are considered a ___

WHAT IS SUSTAINABLE AGRICULTURE?

Sustainable agriculture means growing food in a way that keeps the land, water, and animals healthy. It helps nature, reduces waste, and makes sure future generations can grow food too!

Find 28 hidden words about sustainable agriculture. Words can be found up, down, across, and diagonally.

Answers on page 23!

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

Bees
Biodiversity
Carbon
Compost
Crops
Farmer
Farm
Food
Groundcover
Grains
Grow
Irrigation
Insects
Land
Mallee
Mulch
Organic
Pollinators
Soil
Sun
Sustainable
Tractor
Trees
Water
Weeds
Windbreaks
Worms

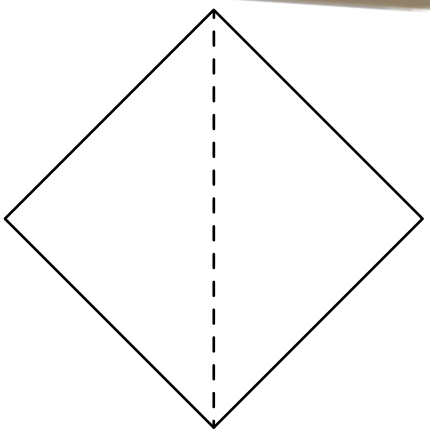
REGENT PARROT

The regent parrot is a stunning bird with bright yellow and green feathers and a red beak, making it easy to spot. These parrots live in the Riverland, nesting in the hollows of old trees along the riverbanks.

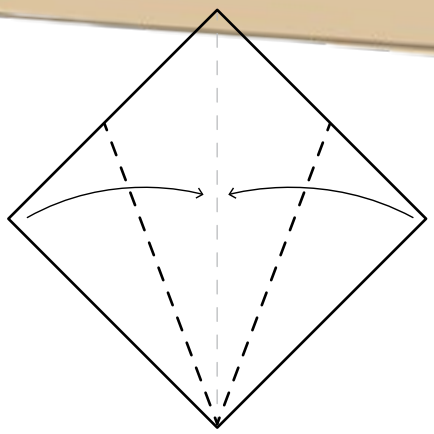
Regent parrots love company! They often fly in flocks, swooping through the sky or playing in the trees. Their diet includes seeds, buds, flowers, and even insect larvae.

This beautiful bird is listed as vulnerable, and people are working hard to protect its habitat, making sure it has safe places to nest and find food.

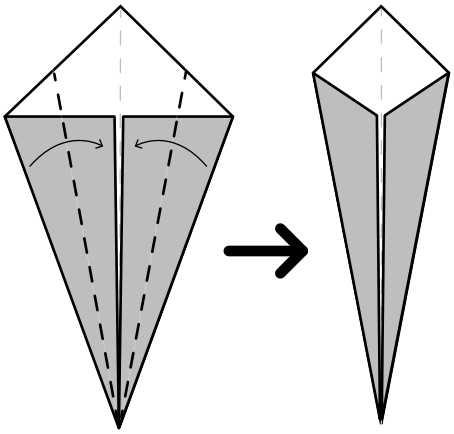
ORIGAMI FUN PELICAN



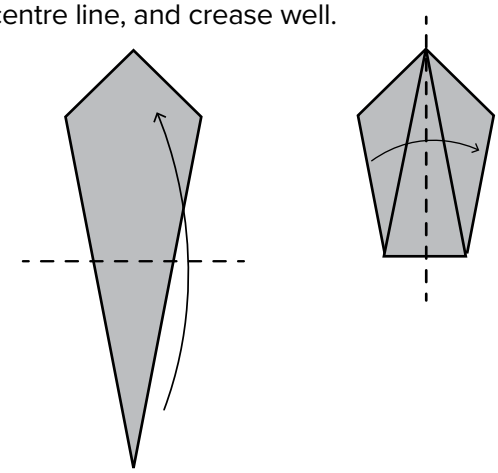
1. Start with your paper white side up. Fold in half, as shown.



2. Fold the outside corners into the centre line, and crease well.

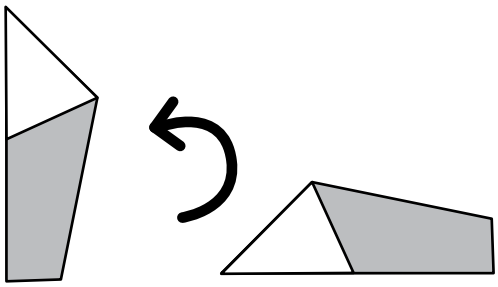


3. Fold into the centre once again.

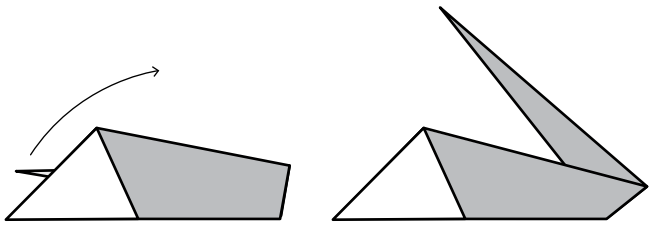


4. Turn model over and fold bottom corner up to the top corner. Crease very well

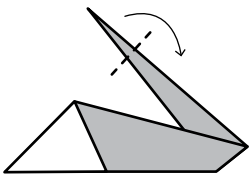
5. Fold in half.



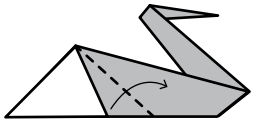
6. Rotate model.



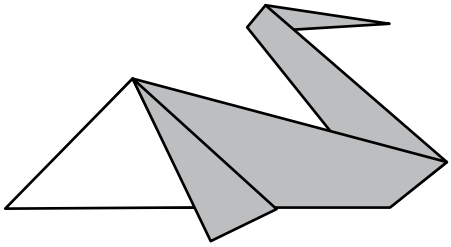
7. Raise the inside triangle upwards slowly, then flatten and crease well.



8. Inside reverse fold the head along the crease shown.



9. Fold each wing upward as shown, then open out slightly.



10. And that's it! Your pelican will now rest on its wings and sit up.

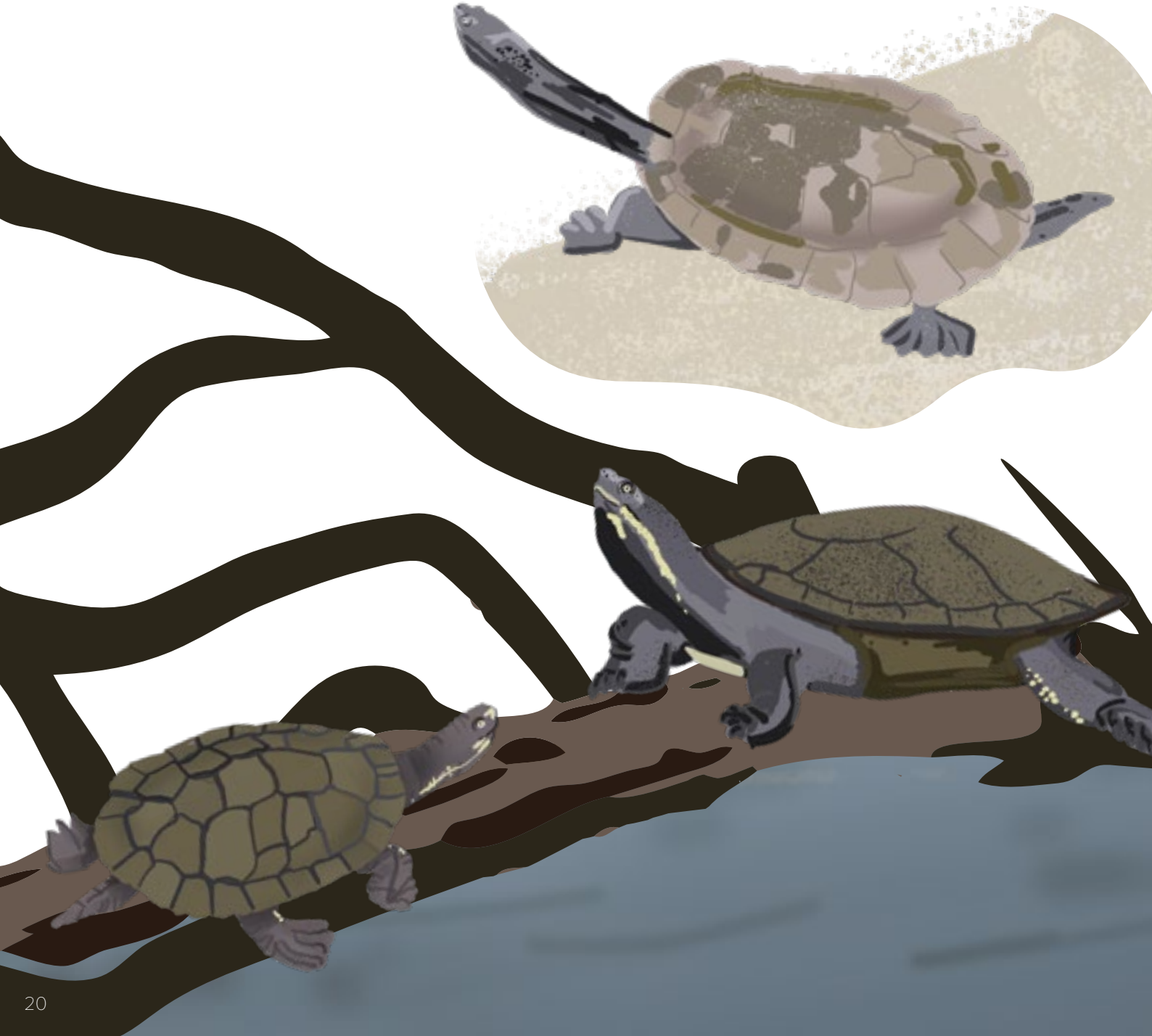
COLOUR IN THE MURRAY-DARLING CARPET PYTHON

Murray-Darling carpet pythons are non-venomous and harmless to humans. These skilled climbers explore cliffs, trees, and bushes to find food and shelter. They can grow up to 2.7 metres and help control pests like mice, rats, and rabbits, making them valuable to farmers and the environment. Their diet also includes possums, frogs, lizards, and birds. With silver and black patterns, they blend into their surroundings, making them expert hunters in the wild.

PROTECT OUR TURTLES

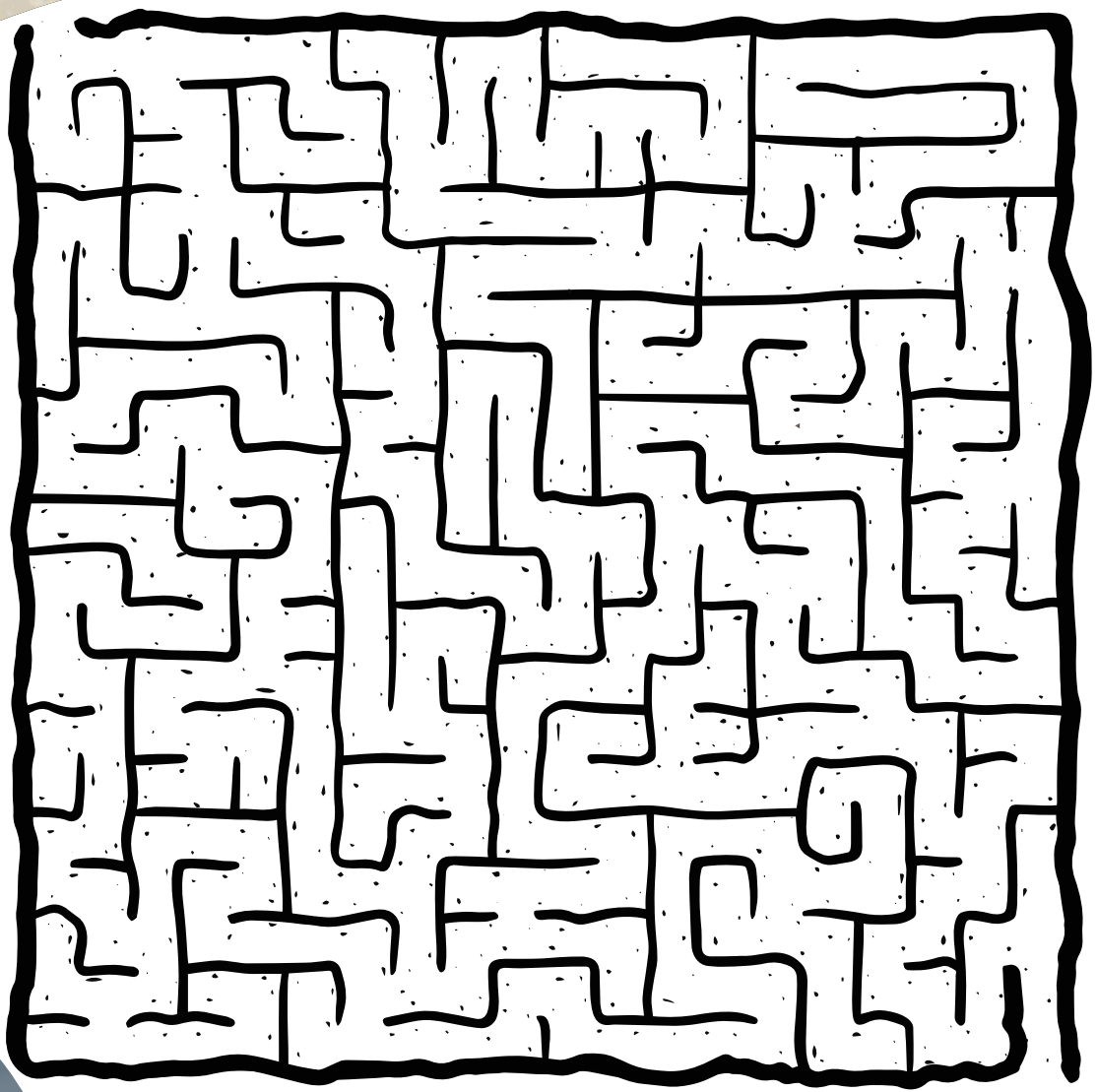
The Murray short-necked turtle, Eastern long-necked turtle, and broad-shelled turtle call the Murraylands and Riverland home, living in rivers, lakes, and wetlands. These turtles help keep waterways healthy but face threats like habitat loss, predators, and road accidents.

Breeding happens in November, and turtle hatchlings need all the help they can get to safely make it to the water before predators can catch them.

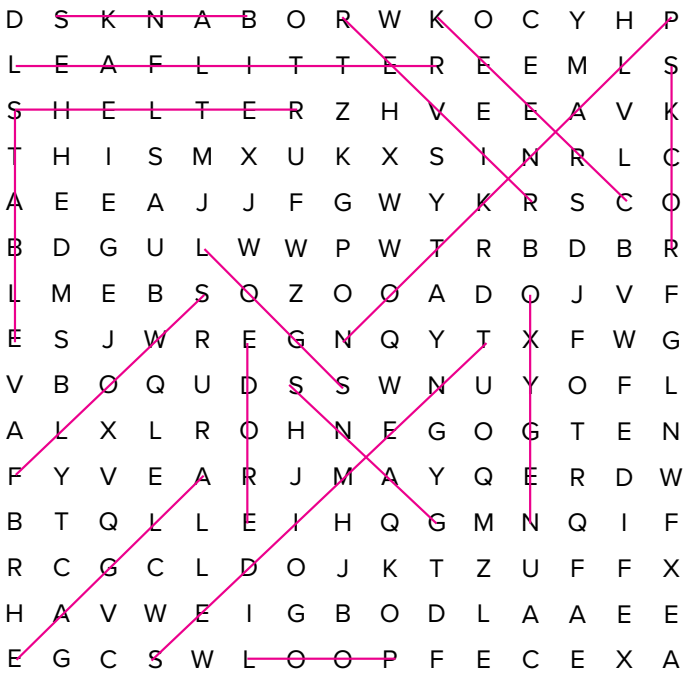


Can you figure out this maze and help these baby turtles reach the water safely?

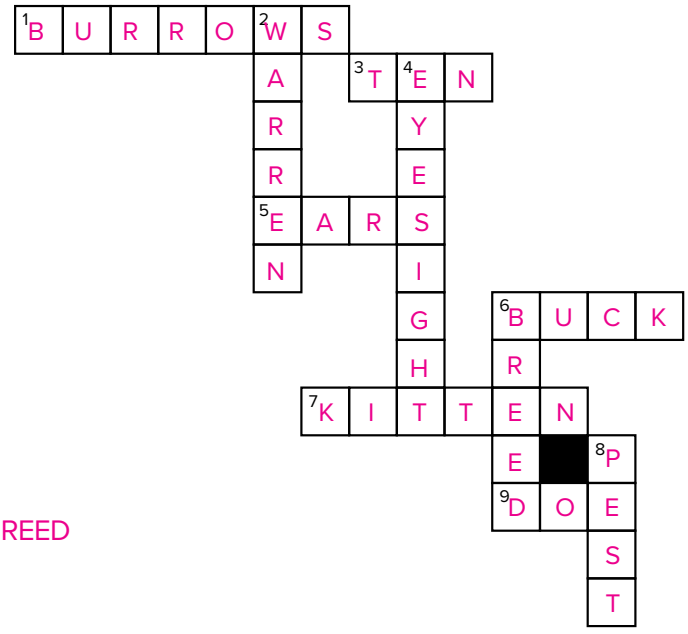
Answers on page 23!



ANSWERS AND SOLUTIONS



Algae
Banks
Creek
Erode
Flows
Leaflitter
Logs
Oxygen
Plankton
Pool
River
Rocks
Sediment
Shelter
Snag
Stable



Across

1. Rabbits live underground in BURROWS
3. Rabbits on average live for TEN years
5. Rabbits have long EARS
6. A male rabbit is called a BUCK
7. A young rabbit is called a KITTEN
9. A female rabbit is called a DOE

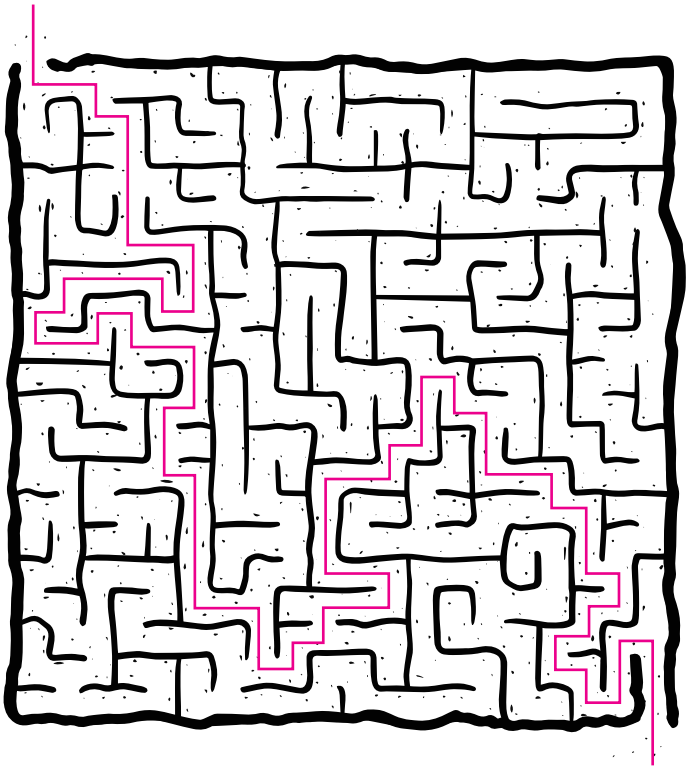
Down

2. A group of burrows is called a WARREN
4. Rabbits have excellent EYESIGHT
6. From three months of age, rabbits can start to BREED
8. In Australia, rabbits are considered a PEST

ANSWERS AND SOLUTIONS

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

Bees
Biodiversity
Carbon
Compost
Crops
Farmer
Farm
Food
Groundcover
Grains
Grow
Irrigation
Insects
Land
Mallee
Mulch
Organic
Pollinators
Soil
Sun
Sustainable
Tractor
Trees
Water
Weeds
Windbreaks
Worms



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