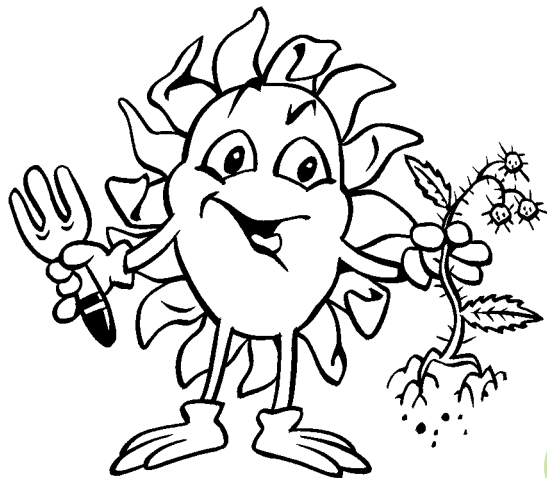
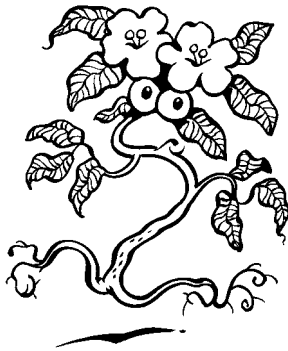


Weedbuster

activity book



Acknowledgement

Illustrations: Paul Lennon

Note: Mention of a trade company name in this publication does not constitute a guarantee or endorsement by the Department of Agriculture and Fisheries.

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Contents

What is a weed?	2
Weed herbariums	3
Map the location of weeds	9
Develop a crime file	11
Biological control	14
Where's Woody?	15
A day in the life of Woody the Weedbuster	16
Weedbusting in your own backyard	18
There once was a plant ...	19
Weedbuster quiz	20
Spot the differences	21
Help the biocontrol beetle get to the lantana weed	22
Woody word puzzles	23
Spot the odd one out	24
Woody drawathon	25
Get to Woody's research station	26
Answers to puzzles	28



What is a weed?

A weed is any plant growing where it is not wanted. Most people think of weeds that hurt them—plants with spines or prickles or plants that have odd smells or look tangled in their growth—but weeds come in all shapes and sizes. Identifying them is the first step in effectively controlling them.

In fact, some plants that people grow in their gardens can become serious weeds. Weeds can be found among crops and pasture, on roadsides, in forests and national parks, and even in rivers and lakes.

A weed can:

- adapt easily to new soils
- grow in relative extremes of temperature and rainfall
- reproduce readily.

What weeds do you know?

- a) As a class, brainstorm the number of weeds you already know.
- b) Together with your parents, make a list of the weeds you know.
- c) Compile the two lists—how many weeds did you come up with?

Did you know there are almost 100 declared plants in Queensland?

A full list can be found at www.biosecurity.qld.gov.au

Weeds are a problem because they:

- reduce land available to Australian animals and can be poisonous if eaten
- lead to allergies and skin rashes in people
- reduce enjoyment of canoeing, hiking, fishing and camping
- poison food sources for cattle and sheep
- reduce water quality and prevent recreational activities
- outgrow native plants and take over bushland
- increase the risk of fire in dry seasons.



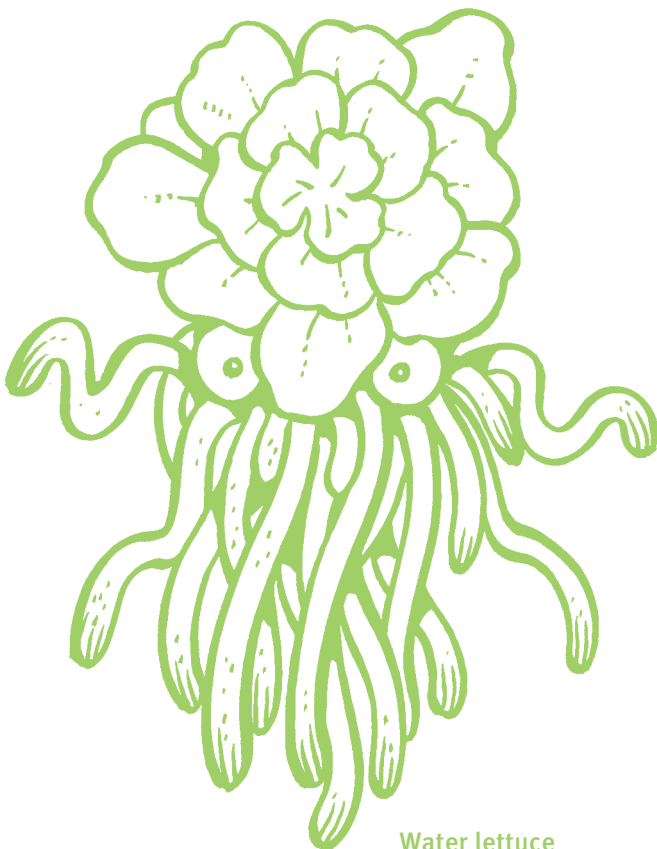
Weed herbariums

A herbarium is a collection of plants. Scientists make herbariums to help them identify various species and their characteristics. A herbarium card is used to record each plant's features, such as:

- the size of its leaves
- how it spreads seeds
- the type of plant.

Weeds come in many shapes and sizes. Some are grasses, shrubs, trees, creepers, climbers, bulbs, tubers and aquatic plants.

To help build a picture of the weeds in your town, district, school, property or backyard you could make your own weed herbarium. The activities on the following pages will show you how.



Water lettuce

Information on how to identify weeds can be found on the Weeds Australia website at www.weeds.org.au and at www.biosecurity.qld.gov.au

For more information, search for 'Queensland Herbarium'

Creating a weed herbarium

Collect three different weed samples.
You will need:

- plastic bags—one for each weed sample collected
- labels and pens to mark the bags
- a notebook
- garden tools
- safety gear—gloves, hat, sunscreen and shoes
- a weed guide or field book to help identify species.



Step 1: Find a weed

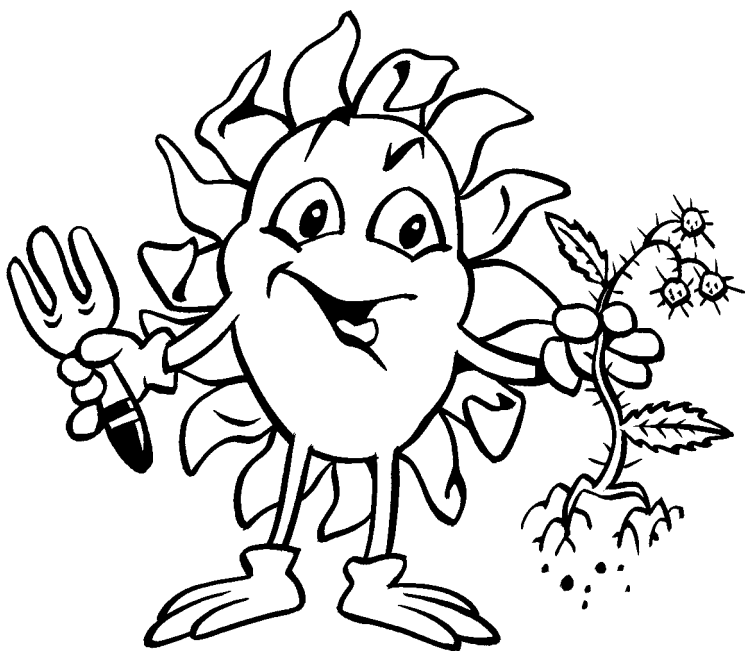
Look for the following signs:

- a creeper or climbing plant that has smothered all other plants or trees in an area
- a plant that forms densely and is very prickly
- a plant that has taken over bushland or is choking a creek bank.

Step 2: Collect information about your weed

Take time to look at the weed before you collect it and record details:

- Record what you notice around the weed:
 - What are the characteristics of the soil (i.e. colour, texture, moisture)?
 - Are there other plants growing around it?
 - How is the weed getting water?
- Try sketching the weed and writing down some observations, including the:
 - flower colour
 - shape of seeds
 - size of the flower and shape of the plant.



Step 3: Collect your sample

Include all parts of the weed—not just the leaves:

- Include flowers, fruit (even if they are woody and hard) and leaves. Also include seeds and roots of the weed.
- For weeds that are trees or shrubs, also include a small branch and some bark.
- For a small plant or grass, include the whole plant (if possible).
- If the weed has underground runners, include them also.

Step 4: Store your sample

Place the sample in a plastic bag and label it for later reference. Store the bags in a cool, dry place—don't leave them in the sun or your samples will wilt.

Remember not to spread plant fragments or seeds on your way back home or to the classroom.

How can you tell whether a plant is a weed?

- Ask a farmer or gardener.
- Research plants on the Weeds Australia website at www.weeds.org.au
- Research plants on the Biosecurity Queensland website at www.biosecurity.qld.gov.au
- Compare the plants you have found to a picture in a weed guide or reference book.



Record information about your samples.

You will need:

- newspaper to spread out over the ground
- some bricks to hold the paper in place
- pencils and ruler
- clear glue and scissors
- herbarium cards (photocopy the card opposite).

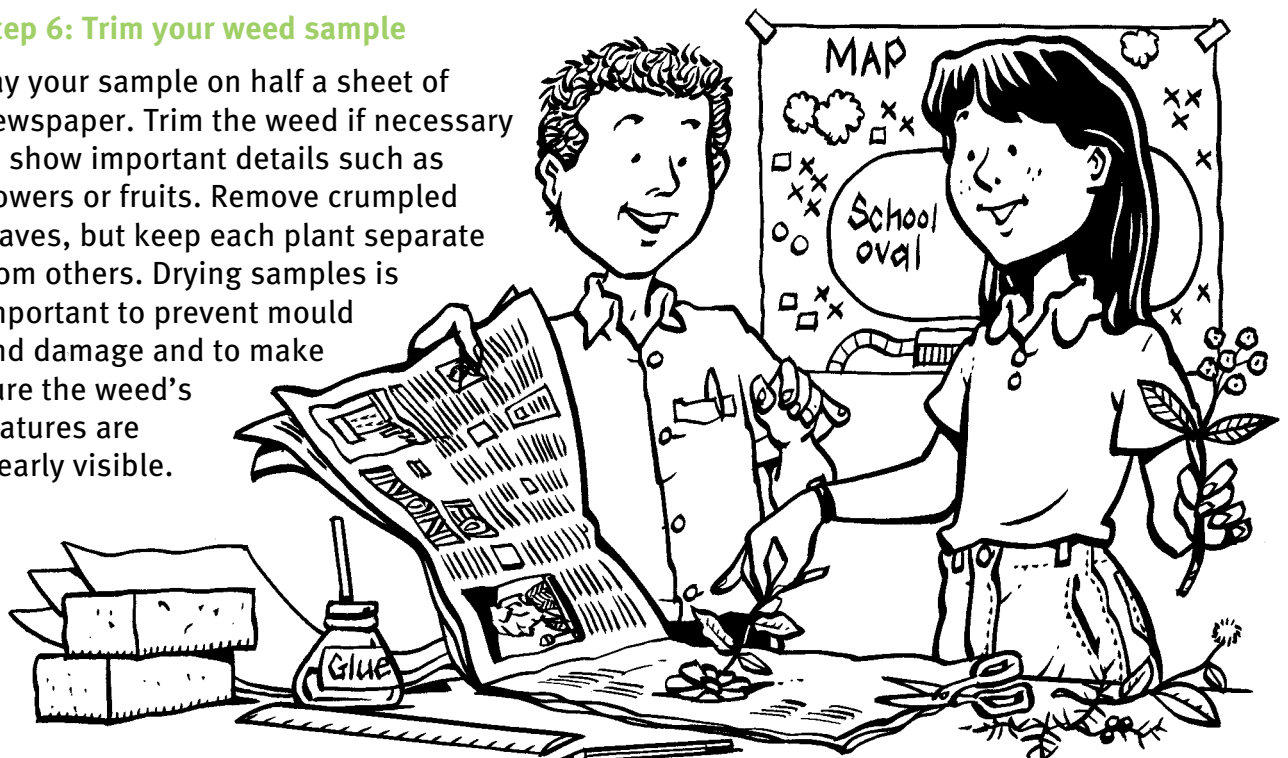


Step 5: Fill in a herbarium card for each sample

- Give it an identification number.
- Write down your name.
- Fill in the rest of the card.
- Once you've identified your sample, record the common name and scientific name (you'll need to use a weed guide or reference book).



Step 6: Trim your weed sample

Lay your sample on half a sheet of newspaper. Trim the weed if necessary to show important details such as flowers or fruits. Remove crumpled leaves, but keep each plant separate from others. Drying samples is important to prevent mould and damage and to make sure the weed's features are clearly visible.





Herbarium card

Card number	<input type="text"/>	Collector's name	<input type="text"/>
Weed common name	<input type="text"/>	Date of collection	<input type="text"/>
Weed botanical name	<input type="text"/>	Season of the year	<input type="text"/>
Location found	<input type="text"/>	Locality	<input type="text"/>
Description of the weed <input type="text"/>			
tree	<input type="checkbox"/>	shrub	<input type="checkbox"/>
vine	<input type="checkbox"/>	grass	<input type="checkbox"/>
water	<input type="checkbox"/>	creeper	<input type="checkbox"/>
bulbs/tubers	<input type="checkbox"/>	other	<input type="checkbox"/>
Describe leaves and flowers (hairy, colour, spines, pods) <input type="text"/>			
Describe fruit (berries, colour, hardness, attractiveness) <input type="text"/>			
<input type="text"/>			
Typical habitat (shade/sun, amongst trees, grass, footpaths, creek)			
<input type="text"/>			
<input type="text"/>			



Card number	<input type="text"/>	Collector's name	<input type="text"/>
Weed common name	<input type="text"/>	Date of collection	<input type="text"/>
Weed botanical name	<input type="text"/>	Season of the year	<input type="text"/>
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tree	<input type="checkbox"/>	shrub	<input type="checkbox"/>
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Describe leaves and flowers (hairy, colour, spines, pods) <input type="text"/>			
Describe fruit (berries, colour, hardness, attractiveness) <input type="text"/>			
<input type="text"/>			
Typical habitat (shade/sun, amongst trees, grass, footpaths, creek)			
<input type="text"/>			
<input type="text"/>			



Step 7: Press your weed sample

Fold the second half of the newspaper over to cover the weed sample. Heavy books or house bricks are ideal to place on top of them.

Step 8: Change the newspaper

Change the newspaper every second day until the weeds become dry (this may take up to 3–4 weeks). During the first week, change the paper every second day, then two or three times over the next few weeks.

Note: Some weeds (such as mother of millions) that have thick, fleshy leaves and stems will require the paper to be changed every day for the first week, then every second day. This will help speed up the drying process.



Step 9: Mount your weed sample

Mount your pressed weeds by gluing them to a piece of card. Store the herbarium card with the sample. Neatly write the notes you made about the weed.

Identify your plant by its characteristics. Use a weed guide or reference book, the fact sheets at www.biosecurity.qld.gov.au or visit the Weeds Australia website at www.weeds.org.au

This activity was adapted from the School Link information sheets (Greening Australia, Queensland).



Map the location of weeds



Step 1: Photocopy the map grid

Photocopy the map grid on page 10 in this book to use as your personal map to show the location of weeds in your area.

Step 2: Mark locations of features on the map grid

Ask your teacher to mark on the location of visible features such as buildings, creeks, ovals and bushland. You need to understand where these features are to accurately mark on the map the location of the weed species you have found.

Step 3: Mark locations of weeds

Mark in the locations of the weeds you found. Use a different symbol or colour for different species.

Advanced exercise: While you are walking around the area, have a look for further infestations. You might be surprised how many weeds of the same type are in the area. Mark major concentrations of the weed by shading or colouring affected areas on the map grid.

Map grid

Use this grid to mark the locations of various weed species. Mark in major features like buildings and ovals to help give you the grid-scale before marking weed locations (ask your teacher for help). You might choose a small dot to mark the places where you found your weed specimens. Use a different colour or symbol shape to show different species.

Colour or shade areas that are infested with the same weed around your area.

Develop a crime file



Have you heard of Woody the Weedbuster? Woody helps combat weeds that invade our natural bushland. Weeds like parthenium, alligator weed, camphor laurel and rubber vine are spreading across the state and causing destruction wherever they go. They are destroying native bushland, clogging up creeks, destroying bushland friends' homes and making people sick.

You might think they're harmless at first, but they're sneaky enough to fool you if you're not aware of what they're up to. This is where we need your help.

Step 1: Create a crime file card

Have a look at the crime file cards on the next page for some of the real nasties, then make up your own crime file. To find information about local weeds, use the fact sheets at www.biosecurity.qld.gov.au or weed guides from your local council. Record important facts about the weed you've chosen on the card.

Step 2: Arrange information under headings

Use some of the following headings to describe the weed or make up some of your own:

- What is the crime (i.e. why it is a problem)?
- What does it look like?
- Where did it come from?
- How does it spread?
- What can you do?

Step 3: Create a wanted poster

Design a wanted poster to go with the crime file card (see page 13).



Crime file cards

WANTED



Parthenium

Crime

- Overruns farmers' pastures and spoils their crops.
- Can create severe allergies and skin rashes in people.

What does it look like?

- Grows up to 2 m high.
- Has pale-green leaves that are covered in fine hairs.
- Has creamy white flowers.
- Each flower has four or five seeds about 2 mm long.

Where does it come from?

South America—brought to Australia in 1955

How does it spread?

Seeds are spread mostly by birds, cars and farm machinery.

What can you do?

Make sure you wash your vehicle at local clean down facilities around Queensland to stop this weed spreading.

WANTED



Camphor laurel

Crime

- Outcompetes and destroys our blue-gum trees that koalas need for food.
- Takes over pasture.
- Roots block drains and crack concrete.

What does it look like?

- Grows to 20 m high—one of the biggest weeds you'll see!
- Leaves are glossy and smell like camphor.
- Has lush, bright-green leaves and lots of small white flowers in spring.

Where does it come from?

Taiwan, Japan and parts of China—brought to Australia in 1822.

How does it spread?

Produces over 100 000 seeds each year that can be spread by birds.

What can you do?

Plant native trees instead, making sure smaller plants have room to grow and that camphor laurel isn't blocking their sunlight.



Create your own wanted poster

WANTED

by the Weedbusters

Name: _____

Crime: _____

Biological control

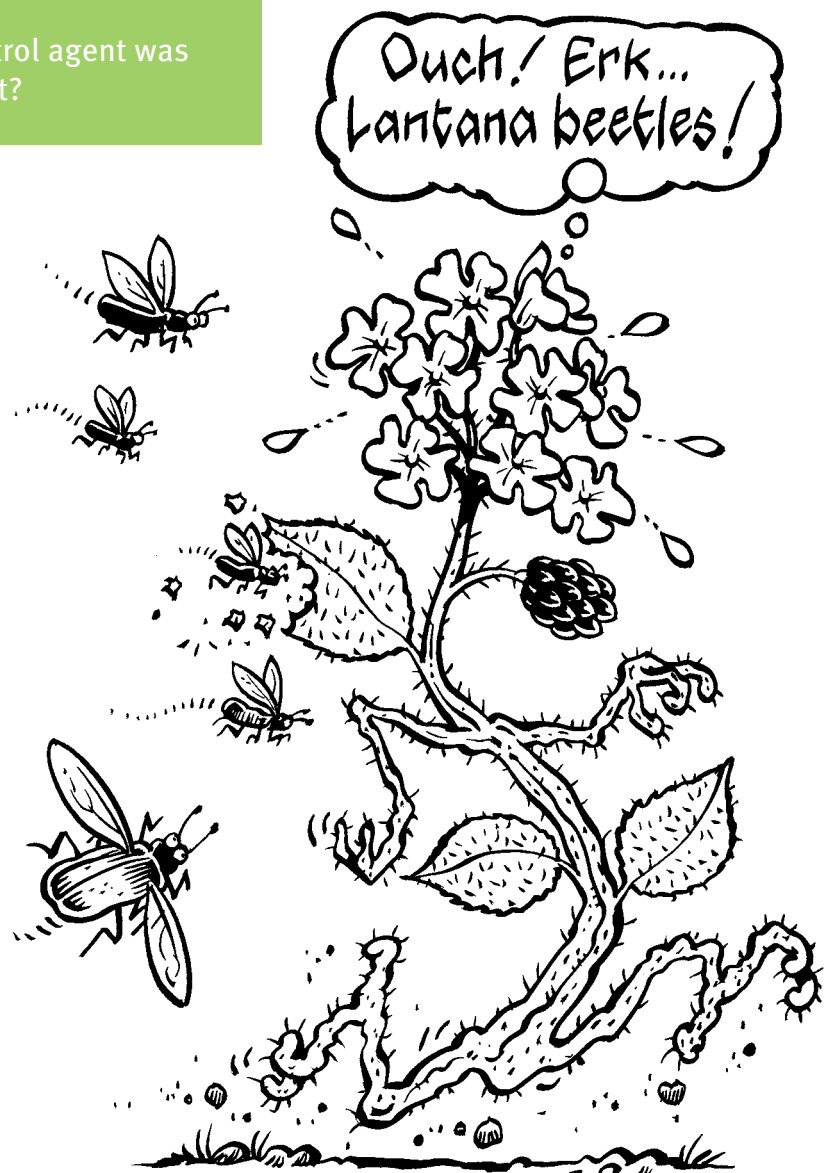
Biological control is using insects to control weeds. Fungi and viruses are also used as biocontrol agents to control insects and plants. Weed biocontrol works when an insect, such as a moth, lays its eggs into a weed. When the caterpillars hatch, they begin to feed. The caterpillars may directly kill the plant, reduce the number of seeds that the plant produces or slow down the growth rate of the plant.

Biocontrol is one of the friendliest control methods to the environment, because it does not involve the use of chemicals and is not dangerous to people or animals.

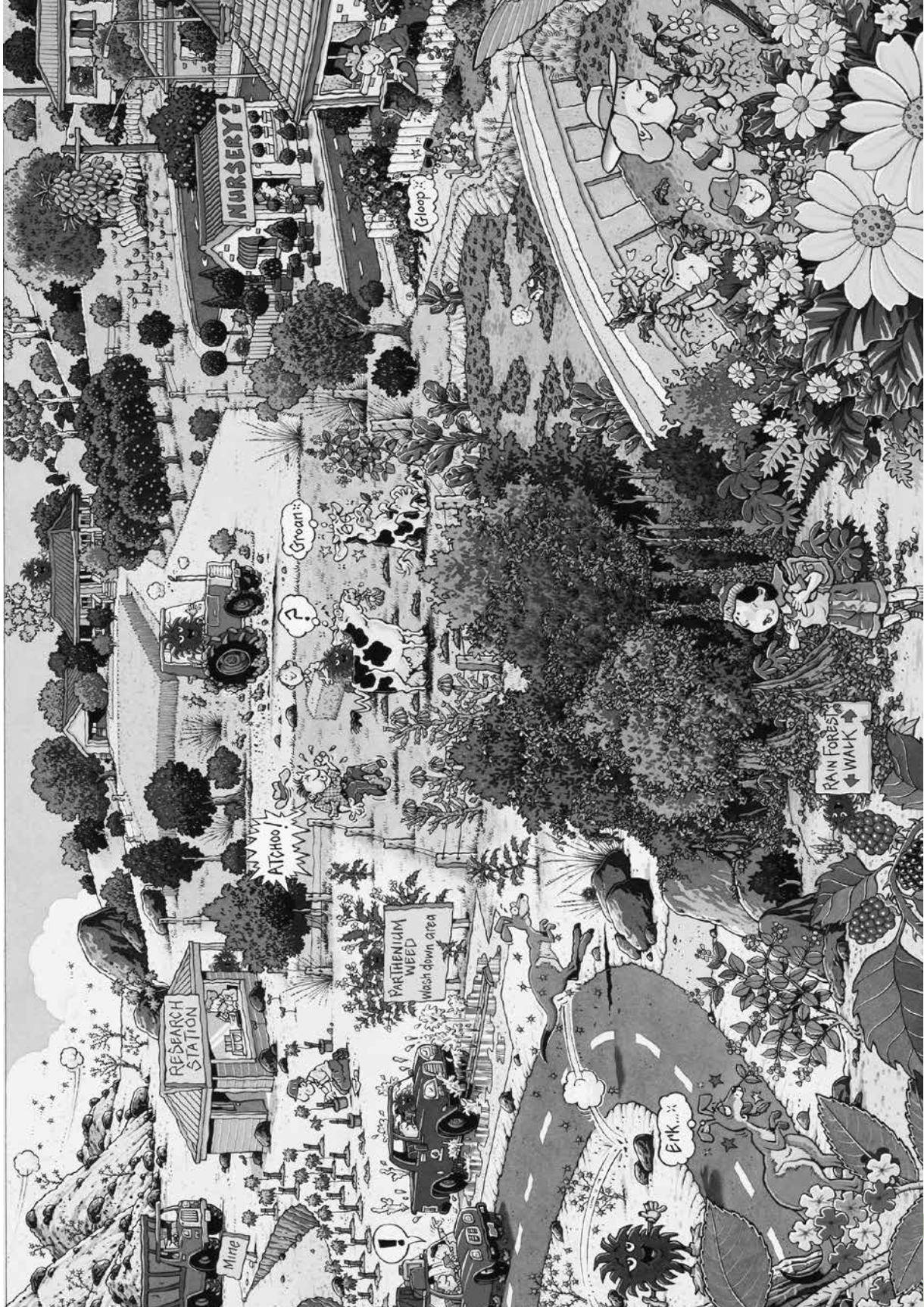
Biological control in Queensland

Use the fact sheet, *The prickly pear story*, at www.biosecurity.qld.gov.au to answer the following:

- i. Why was prickly pear brought to Australia?
- ii. What problem did it cause?
- iii. What type of biological control agent was released to control the plant?



Woody the Weedbuster is hiding in 12 different places. Can you find them all?



A day in the life of Woody the Weedbuster

Kitty cockatoo was teaching Woody weedbuster how to fly above the treetops. They were having an excellent time and Woody was catching some prickly, windblown weed seeds...



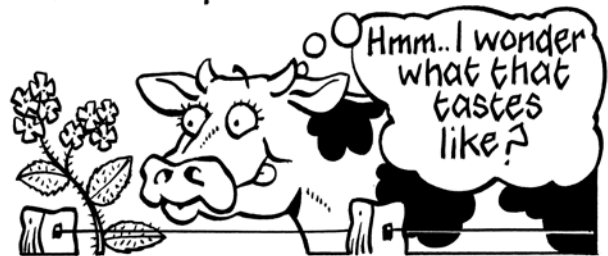
This is great fun, Kitty.

Suddenly he spotted danger below.



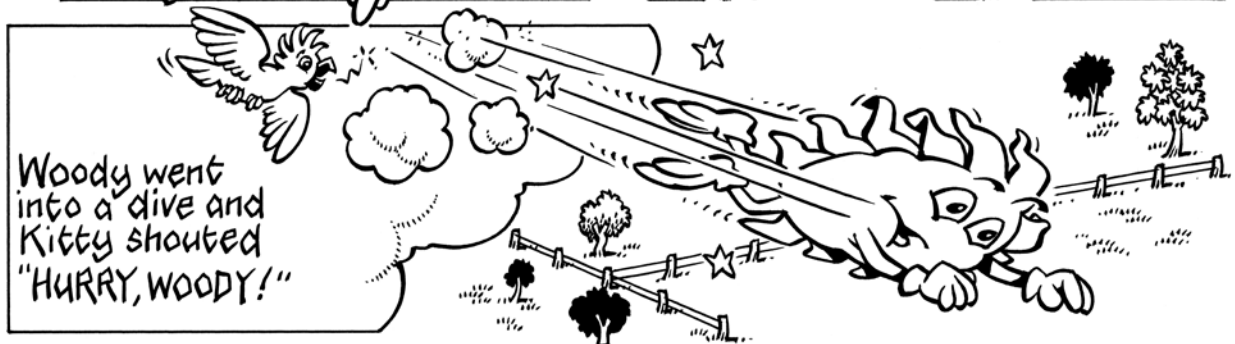
Kitty, look!

Lulubelle, the best dairy cow in forty paddocks, was about to chew on a poisonous lantana bush.

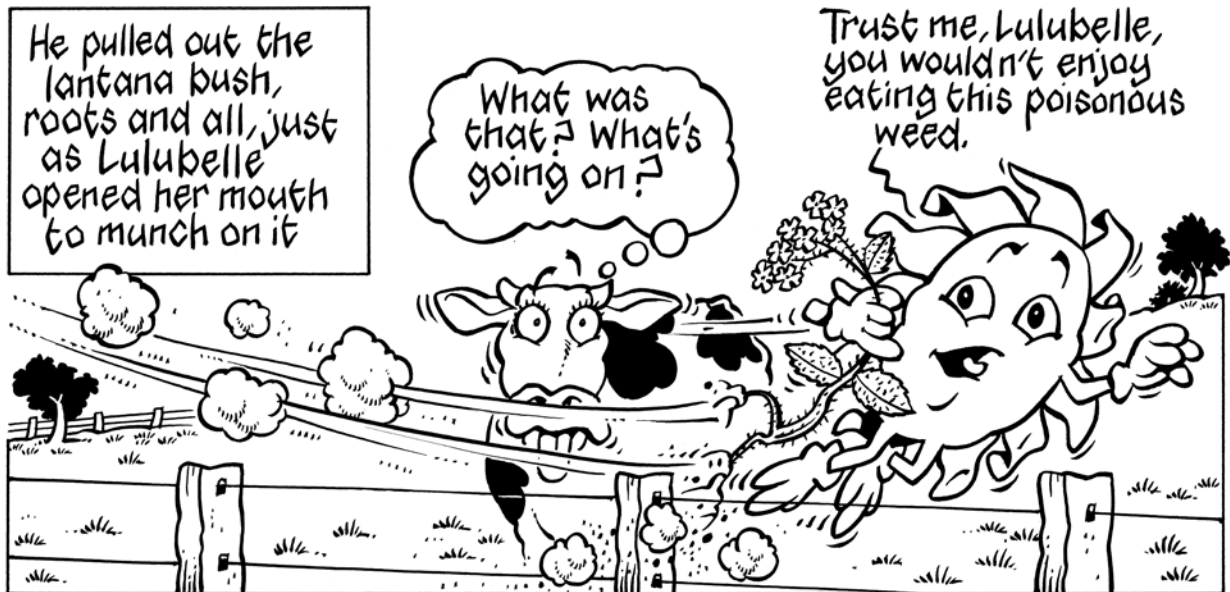


Hmm... I wonder what that tastes like?

Woody went into a dive and Kitty shouted "HURRY, WOODY!"

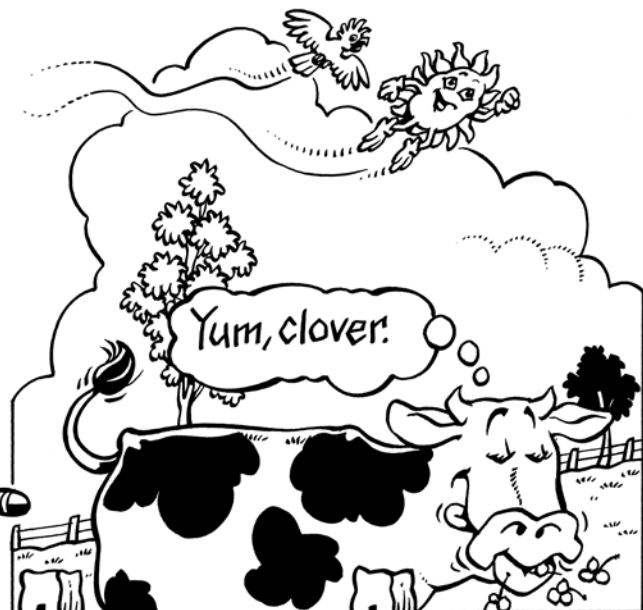


— Would Woody be in time? Would he save Lulubelle...?



Kitty cockatoo had spied a big compost bin near the farmhouse and she held the lid open while Woody dropped the lantana inside.

...So, Kitty and Woody happily continued their flying lesson.



... And Lulubelle would never know how close she came to the worst tummyache of her life.

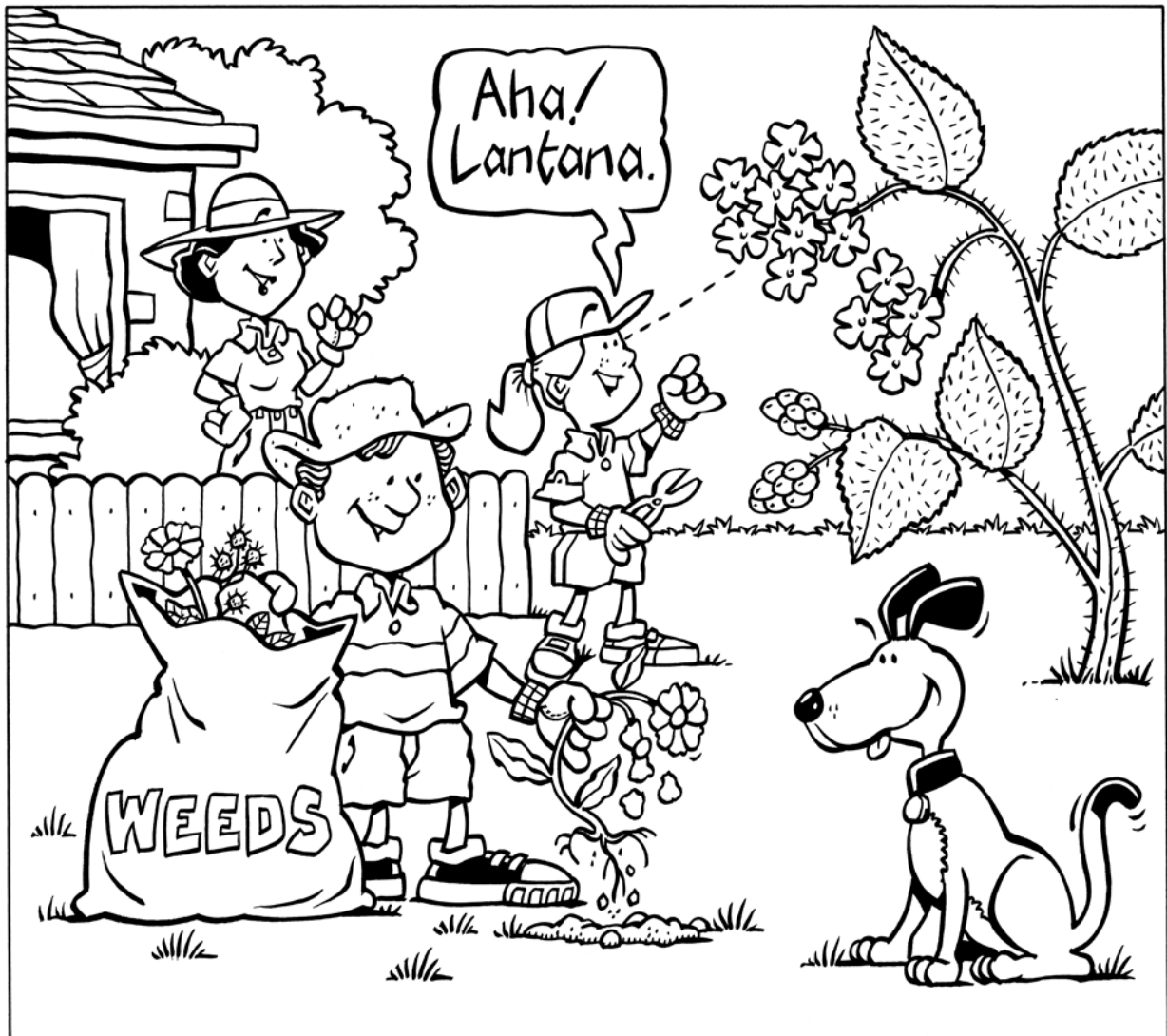
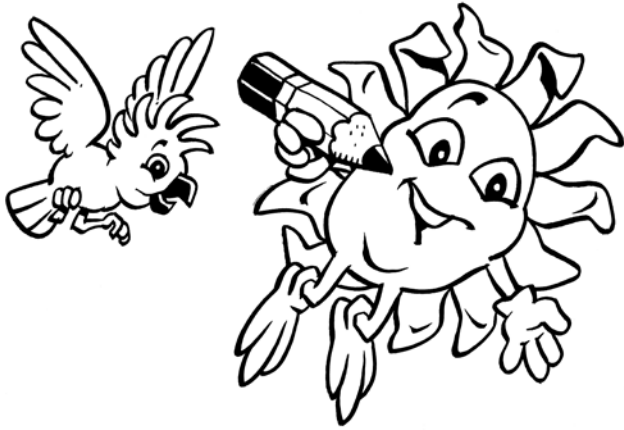
Write a story about Woody and one of his achievements—perhaps a story about how some weed seeds got to Australia in the first place.

Stuck for further ideas? How about:

1. when Woody stopped a new weed entering Australia
2. how Woody and his friends, the biocontrol bugs, helped save some native animals in the bush from invading weeds.

Weedbusting in your own backyard

Colour in the picture below and describe what you think is happening.



There once was a plant ...



Mother-in-law's tongue

There once was a plant, really a weed
That developed from merely a seed
The weed now fled
Over the countryside it spread
So call out for Woody, we're in need.

Watch out for the big camphor laurel tree
He's the biggest weed you'll ever see
Big and tall in the street
Dropping seeds at his feet
And destroying our bushland is he.



Asparagus fern

This activity is about writing something fun. How about a limerick about Woody, or just a short poem? See the limerick above to get you started.



Prickly acacia



Lantana

Weedbuster quiz

Test your knowledge

Answers on page 28.

True or false (please circle answer)

1. A weed always has prickles on it.	True	False
2. Any plant that is not native is a weed.	True	False
3. All of Australia's weeds were introduced accidentally.	True	False
4. Some aquarium plants are weeds.	True	False
5. Weed seeds can be spread by birds.	True	False
6. Some weeds can give you nasty skin rashes.	True	False
7. Weeds often outgrow Australian plants.	True	False
8. Some weeds are poisonous to animals and birds.	True	False
9. Farmers grow weeds to make hay.	True	False
10. All weeds should be pulled up by the roots.	True	False
11. There are only a few different species of weeds.	True	False
12. All plants brought into Australia must be declared to customs officials.	True	False

Circle the correct answer

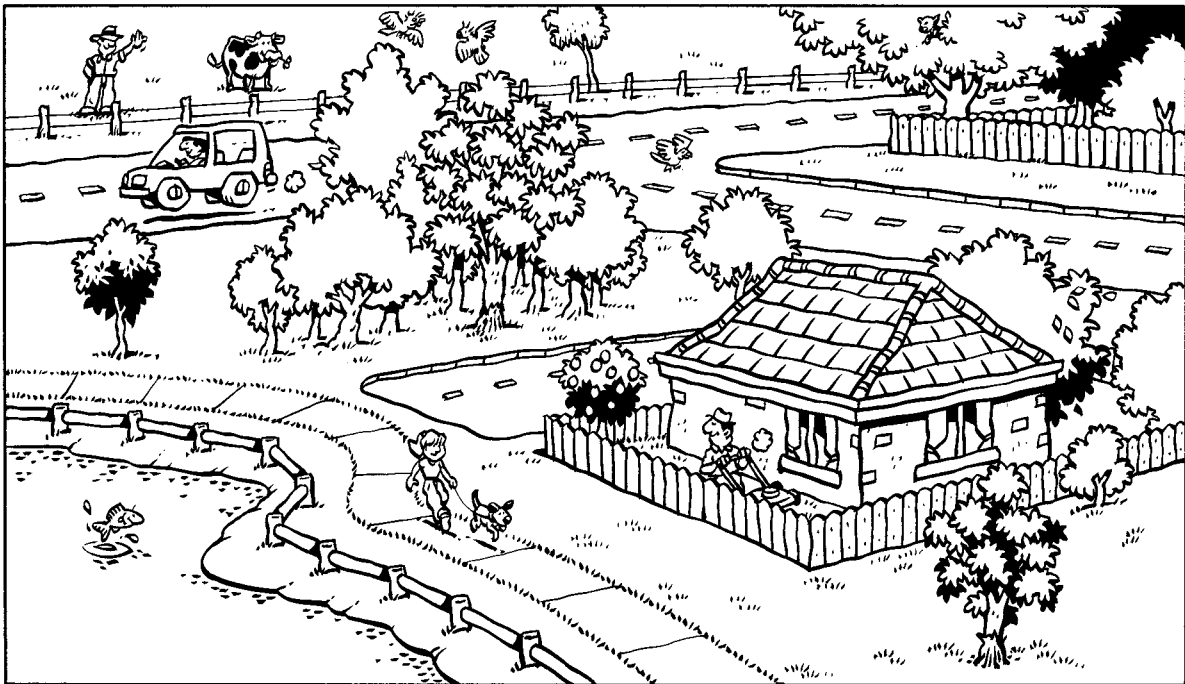
13. How much do weeds cost Australia each year?
- | | |
|------------------|------------------|
| a. \$2 billion | c. \$4 billion |
| b. \$1.7 billion | d. \$9.5 billion |
14. From which continent haven't we obtained weeds?
- | | |
|---------------|------------|
| a. Africa | c. America |
| b. Antarctica | d. Asia |
15. All of the following are weeds, but which is the odd one out?
- | | |
|-------------------|-------------------|
| a. Parthenium | c. Lantana |
| b. Water hyacinth | d. Prickly acacia |
- Why? _____
16. How should you get rid of garden clippings?
- | | |
|--|---|
| a. Dump them in the bush. | c. Cart them in an open trailer to the local waste tip. |
| b. Tip them over the fence onto someone else's property. | d. Compost them to use as fertiliser. |
17. How can we control weeds?
- | |
|--|
| a. Encourage them to grow. |
| b. Pull out plants but leave the seed on the ground. |
| c. Plant native plants and pull out weeds. |
| d. Encourage weeds to grow in bare areas. |

Spot the differences

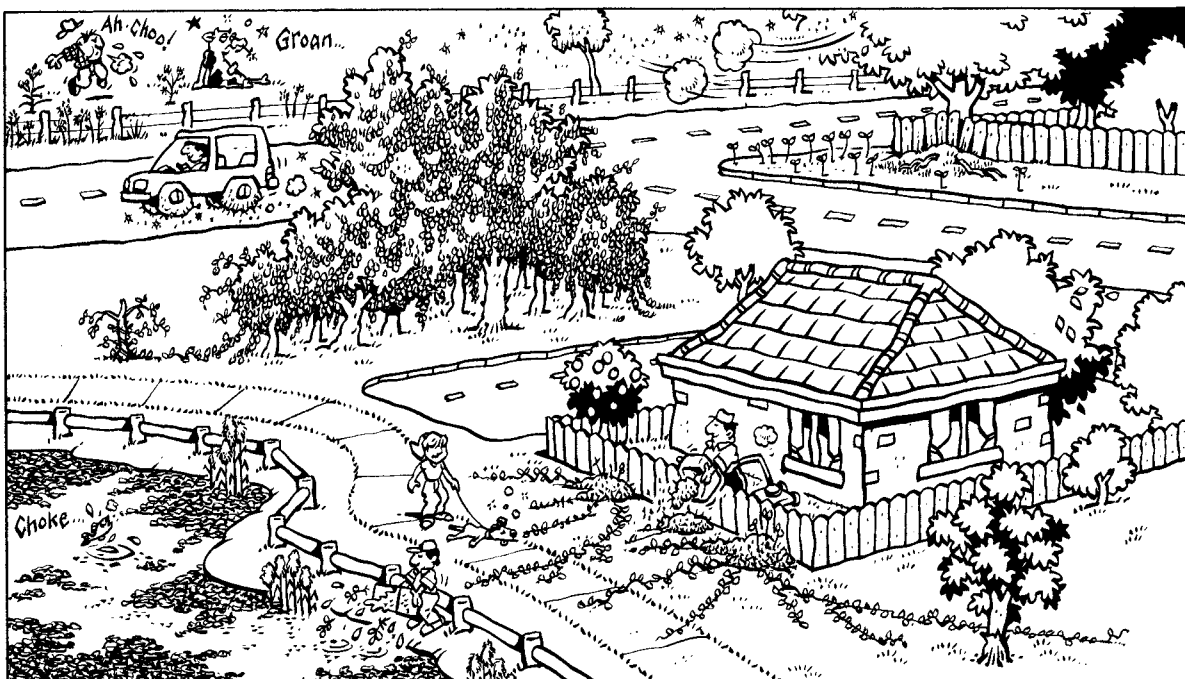
What happens to your neighbourhood if you don't stop the spread of weeds?

Picture A shows a neighbourhood that is free of weeds. In Picture B the weeds have grown out of control. Circle the differences (answers on page 28).

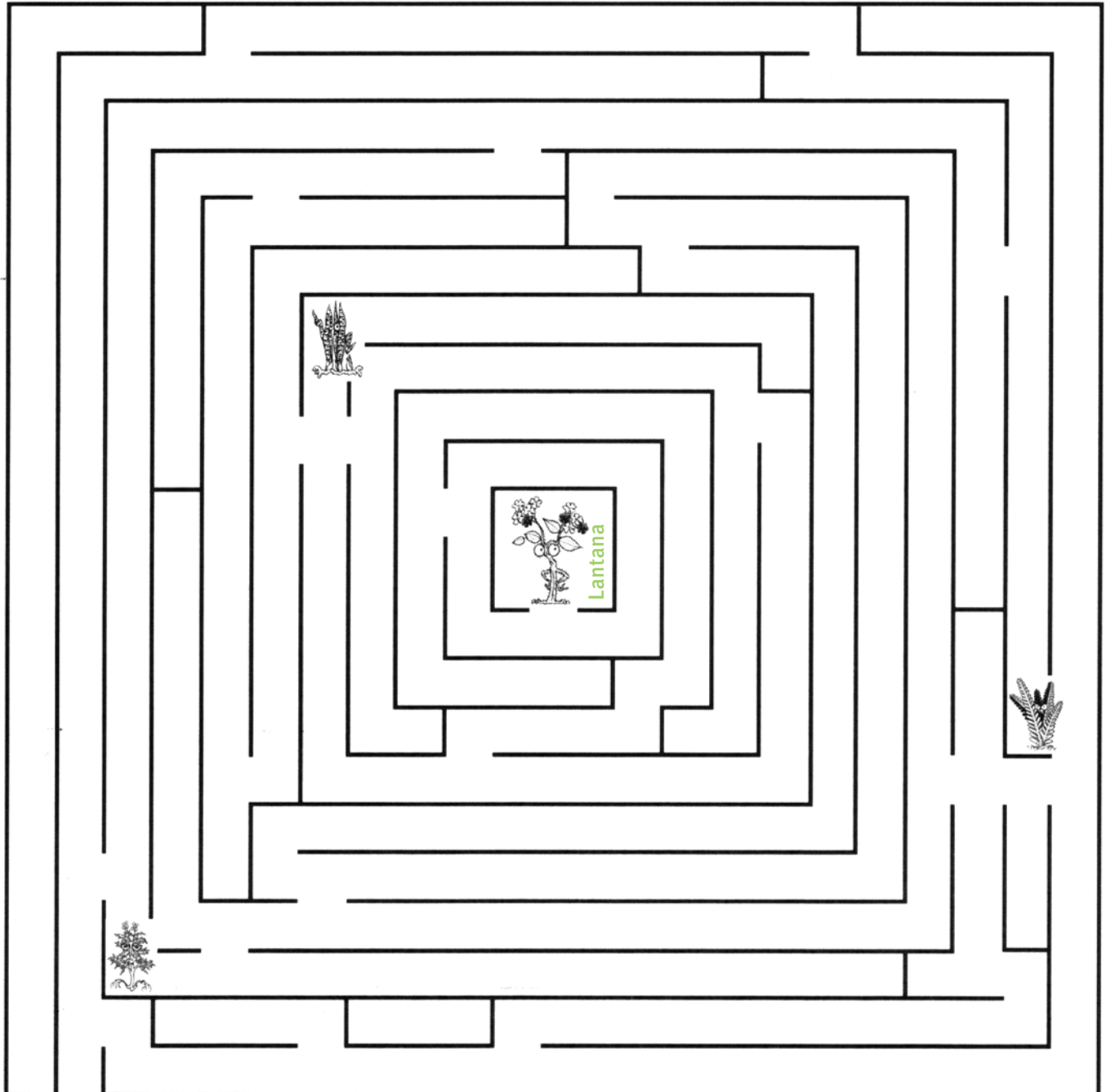
Picture A



Picture B



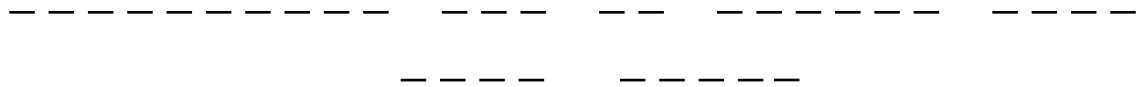
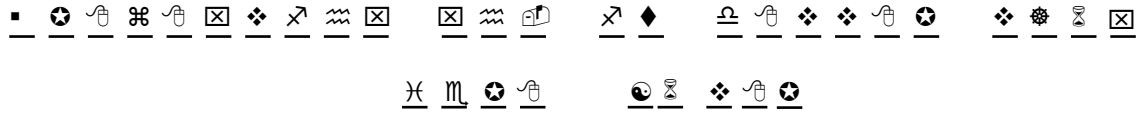
Help the biocontrol beetle get to the lantana weed



Woody word puzzles

Answers on page 28.

Can you make up the sentence using the code?

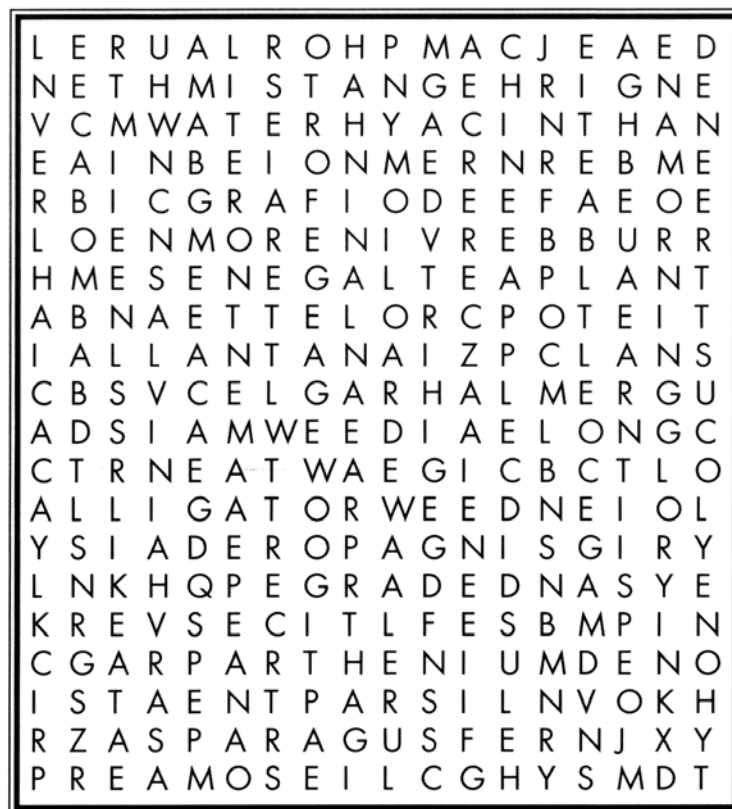


P - ■ R - ● E - ☞ V - ☼ N - ☒ T - ◆ I - ✂ O - ☞
W - ☞ S - ◆ B - ☞ H - ☼ C - ☒ U - ☞ L - ☞ A - ☞

All the words listed below appear in the puzzle horizontally, vertically and even backwards. Circle each word as you find it.

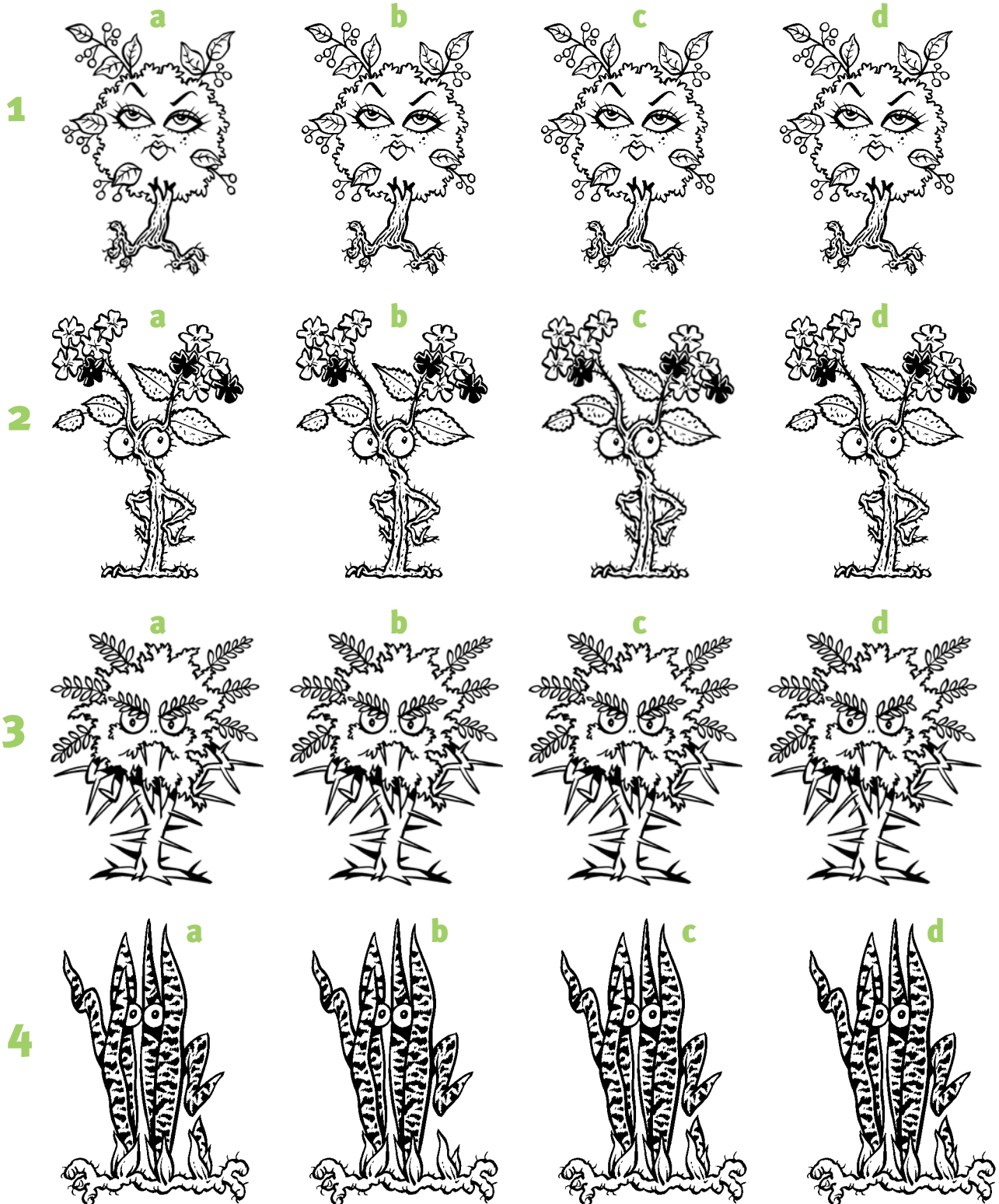
Clues

Alligator weed
Honey locust tree
Morning glory
Cabomba
Parthenium
Siam weed
Water hyacinth
Rubber vine
Chinee apple
Lantana
Asparagus fern
Camphor laurel
Senegal tea plant
Singapore daisy
Prickly acacia
Salvinia



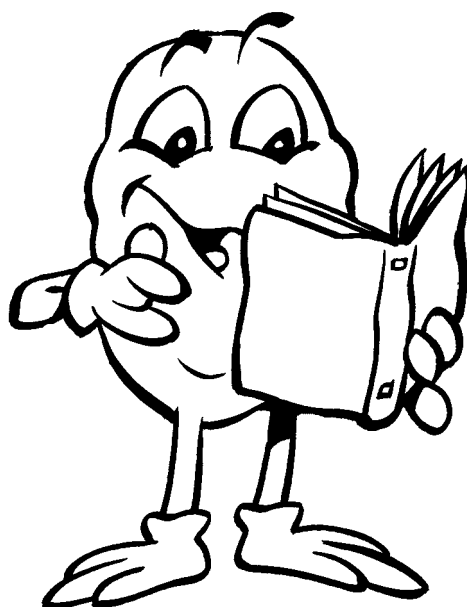
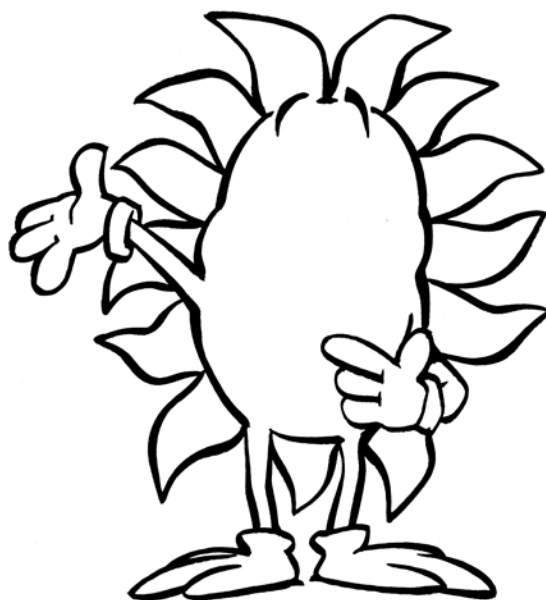
Spot the odd one out

One of the weeds in each line is different to the other three. Circle the odd one out and colour in.

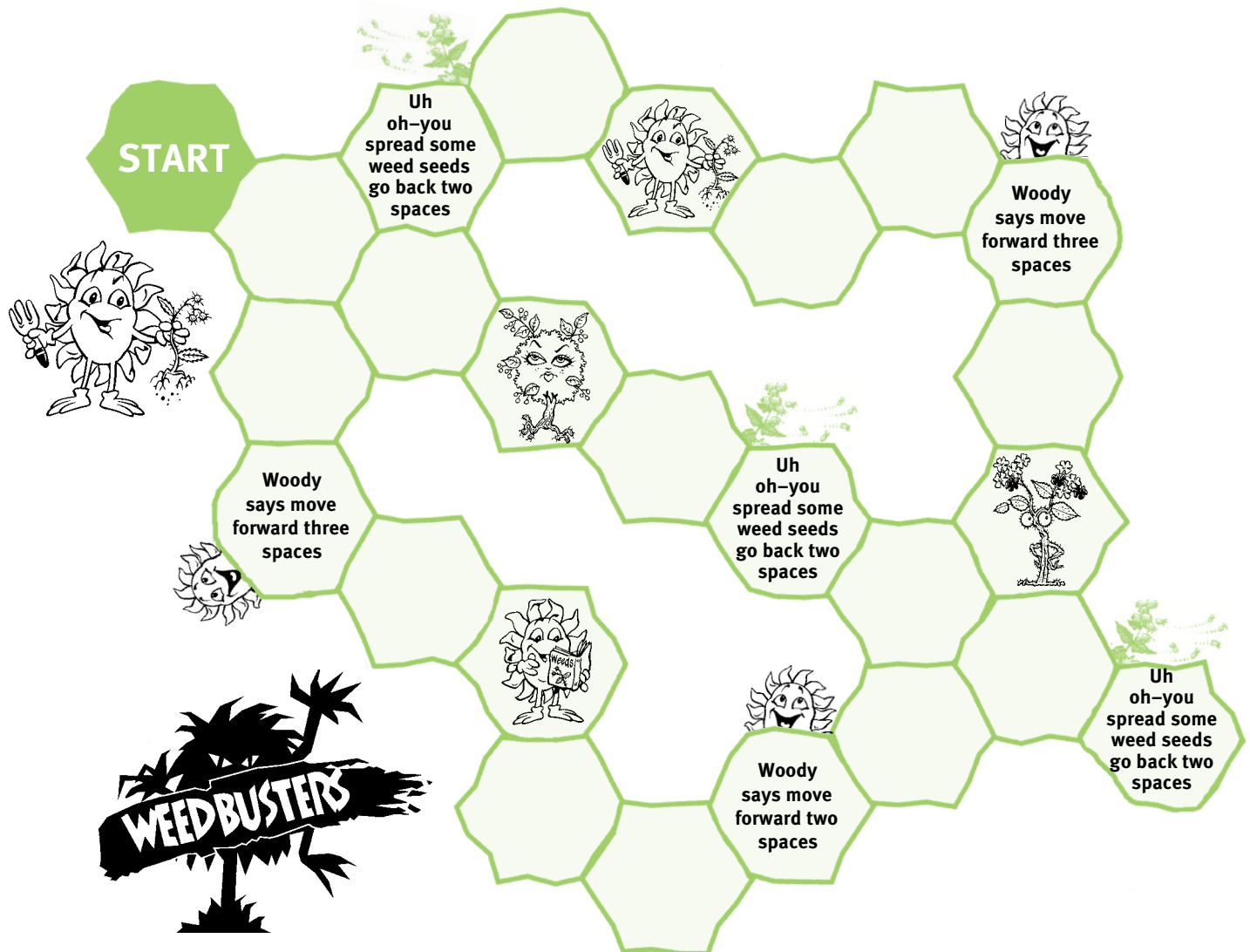


Woody drawathon

Complete the pictures of Woody the Weedbuster below.



Get to Woody's research station



Rules

1. The object of the game is to be the first Weedbuster to reach Woody's research station. Woody needs your help with his research to control weeds, so you'll need to get there as quickly as you can.
2. Up to four players can play the game. You will need dice and a marker (could be a 5c coin or a button, or you can trace over and cut out the markers on the top of the opposite page).
3. When it is your turn, roll the dice and move the number of spaces shown.
4. You can go in any direction, but you cannot step on the same space twice in one turn.
5. If you land on a weed, you get chased back to the start. If you land on Woody, move forward two spaces.
6. To win the game you must roll the exact number to land on 'Finish'.



Weeds



Camphor laurel



Lantana



Water lettuce



Cat's claw creeper

If you land on a weed, go back to the start.

Woody the Weebuster



Weedy woody



Smart woody

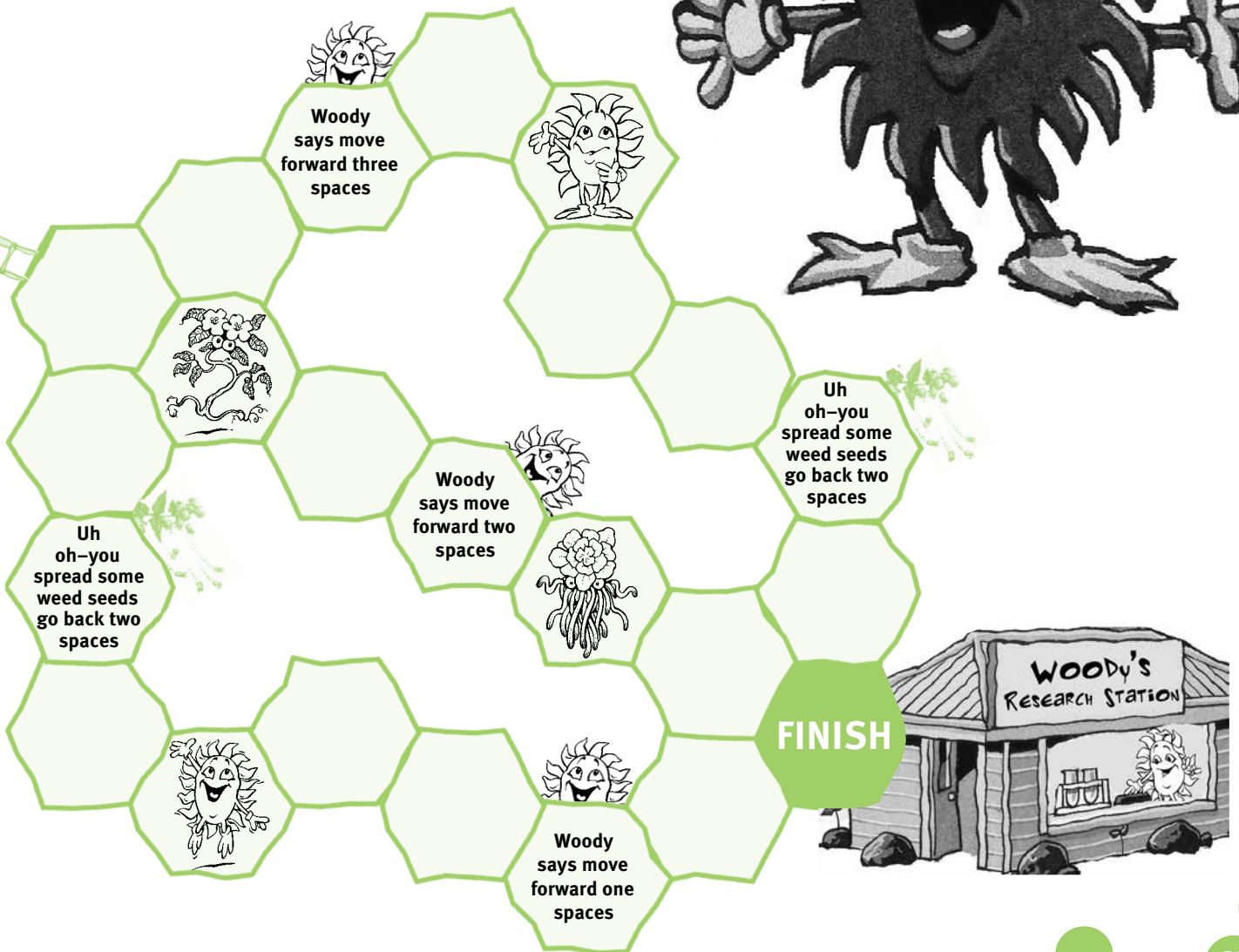


Happy woody



Confused woody

If you land on Woody, move forward two spaces.



Answers to puzzles

Weedbuster quiz (page 20)

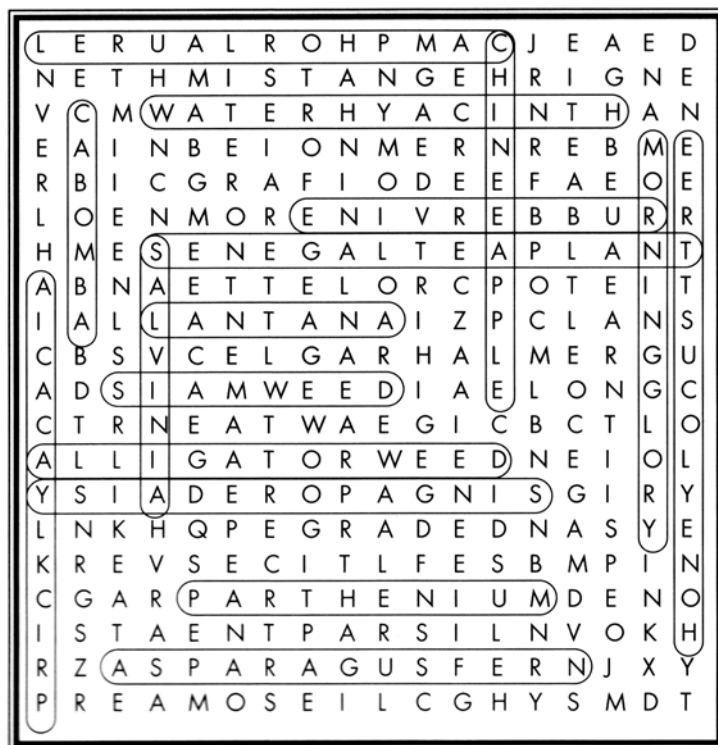
1. False
2. False
3. False
4. True
5. True
6. True
7. True
8. True
9. False
10. False
11. False
12. True
13. c. \$4 billion
14. b. Antarctica
15. b. Water hyacinth—it's a water weed
16. d. Composting to use as fertiliser
17. c. Plant native plants and pull out weeds

Spot the differences (page 21)

1. Weeds cause allergies.
2. Weeds make animals sick.
3. Weeds affect native animals.
4. The wind spreads weed seeds.
5. Wash down cars that have been through vegetated areas.
6. Weeds take over native bushland.
7. Watch environmental weeds spread seedlings.
8. Weeds choke our waterways.
9. Don't put aquarium weeds into waterways.
10. Pets can get sick from eating weeds.
11. Don't dump your garden clippings over the fence.

Woody weed puzzles (page 23)

Prevention now is better than cure later.





1. Cut out the mask along the dotted lines.
2. Cut out two small holes for the eyes.
3. Cut out the holes on the sides. Thread a piece of string or rubber band through the holes.
4. Tie the string around your head to become 'Woody the Weed'.