

How do plants and animals depend on each other?

Interact Discovery Sheets

Science

Years 1-4

By Julie Owen and
Helen Pearson

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CONTENTS

3	Introduction
4	Key Competencies, Habit of Character, Habit of Mind
5	Big Idea, Key Understanding, Focus Question
6	Relate Creation Rap
7	Relate Nature Activity Cards #1
8	Relate Nature Activity Cards #2
9	Recall Living Things
11	Research 1.0 Why are habitats important for plants and animals?
12	Living Things in My Habitat
13	My Plant Investigation
15	Research 2.0 What can we learn about plants and animals in their habitats?
16	My Living Community
17	My Living Community Study
18	Plants in my Community
19	Animals in my Community
21	Research 3.0 How do plants rely on animals in certain habitats?
22	Seeds
23	Research 4.0 How do animals rely on plants in certain habitats?
24	Butterflies
25	Frog Life Cycle
26	Life Cycle
27	Further Research Observing Plants
28	Further Research Observing Animals
29	Further Research Animals
30	Further Research Animal Tracks
31	Further Research Grouping Animals
32	Reason Food Chain
33	Reason Building Food Chains
34	Reason Populations Interact
35	Reason Little Fellow
36	Reason Huia
37	Review and Record True or False
38	Review and Record God's Plan for Harmony & Balance
39	Review and Record God's Plan for Harmony & Balance



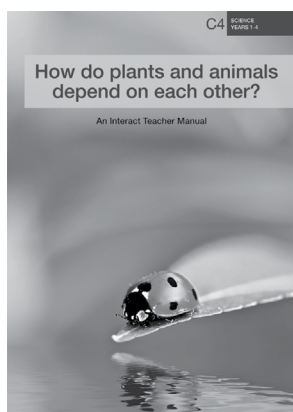
INTRODUCTION

How do plants and animals depend on each other? This *Interact Teacher Manual* forms part of the theme, *God is One God and wants us to be cooperative*. In this investigation we will explore how plants and animals interact and depend on each other in order to survive.

God has created living things to coexist within communities, meeting their needs through an interdependence on others and the environment in which they have been placed. All living things - including plants, animals and people - possess a variety of unique features that enable them to live and breathe, to access food and water, and to reproduce and offer protection for their young. Being part of a community or ecosystem gives living things the ability to not only meet their own needs but, through God's incredible plan, to provide for the needs of others around them.

God's great order and creativity are seen throughout creation, and his ability to hold all things in balance is awe-inspiring. As *Colossians* explains, "in him all things hold together" (1:18b). But while plant and animal communities operate by instinct, God has created people with greater choice. We are called to live in harmony with God and to use the gifts he has given us to manage the creation he has made for us, and to cooperate with each other to make the world a better place.

A living community is very important to God. Healthy communities are a reflection of God's nature of unified wholeness, and result in blessing to those within and around it, as well as to the created world in which they live. As we explore the interaction between plant and animal communities, may we be reminded of God's call to us to be cooperative.





the key competencies are:

**Develop skills in
relating to others**

the habit of character focus is:

Cooperation

the habit of mind focus is:

**Thinking
Interdependently**



I

the big idea is:

**God is one God and
wants us to be
cooperative**

U

the key understanding is:

**Living things work
together to meet each
other's needs**

Q

the focus question is:

**How do plants and
animals depend on
each other?**



Creation Rap



Now in the beginning there was no earth
 'till God spoke the word and gave it birth.
 And God said, "Let there now be light!"
 and straight away it was so bright!
 "I'll call the brightness, day," He said
 and the darkness, night, when it's time for bed."
 And all this happened on Day number 1.
Wow God, You're amazing!

Now God said, "There's too much water, I know,
 so I'll put some above and some below."
 Now the water above He called the sky
 and God looked at it, and said, "Oh my!"
 And all this happened on Day number 2.
Wow God, You're amazing!

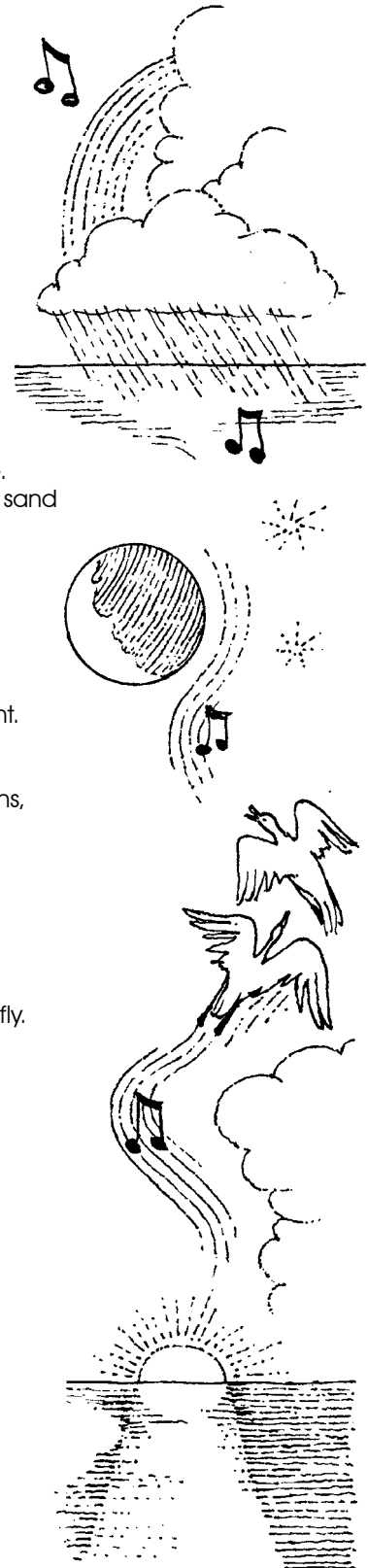
Now God told the waters to get into their place,
 well they gathered all together, they really had a race.
 God named them the seas and they stopped on the sand
 and the dry bit above, well He called it the land.
 Now God said, "I want some plants to grow
 and trees and fruit, now don't be slow."
 And all this happened on Day number 3.
Wow God, You're amazing!

Next God said, "This whole earth needs light,
 I'll make a huge one for day, and a lesser one for night.
 I'll call the big one the sun and I'll make it real hot,
 well the other one's the moon, and hot it's not!
 They'll help you to know all the months and the seasons,
 they're not there for fun, I really have my reasons."
 Well all this happened on Day number 4.
Wow God, You're amazing!

Now God looked at the sea and it was all empty
 so He filled it with fish and creatures aplenty.
 And way up above in the bright, blue sky
 He made a whole lot of birds and He taught them to fly.
 And all this happened on Day number 5.
Wow God, You're amazing!

And on the earth in between God had some fun
 for He made all the animals, so different every one.
 Then right 'till the end God saved His best,
 He said, "I'll just do this, then I'll have a rest."
 And He made Him a man and He gave him a wife
 out of dust and a rib and He gave them life
 and He said, "Rule well all the fish of the sea,
 all the birds of the air, all creatures you see."
 And all this happened on Day number 6.
Wow God, You're amazing!

Now God looked round at the work He'd done
 and He smiled and said, "This sure was fun.
 I persevered and did my best,
 and now I think I deserve a rest."
 And all this happened on Day number 7.
WOW GOD, YOU'RE AMAZING!



Anna Johnstone

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Nature Activity Cards #1



COLOUR:

- Find an object that has at least three colours.
- Find something multi-coloured.

HABITAT:

- Find something growing under difficulties.
- Find where something lives.
- Find a place where nothing would grow.

NUMBER:

- Look for natural objects that have five parts:
- Start with your hand.

TEXTURE:

- Find an object that has these textures:
- smooth, rough,
slippery shiny, flaky,
scaly, gnarled, springy.

AESTHETICS:

- Find something pretty.
- Find something ugly.
- Find something unusual.

FOOD:

- Find a plant that birds would like.
- Find a plant that bees would like.

SMELL:

- Find an unpleasant smell. Describe it.
- Find a smell you like. Describe it.

PATTERN:

- Find something with a pattern of circles.
- Find something spotted.
- Find something with a pattern of scratched lines.

WEIGHT:

- Find something that is very heavy.
- Find something that is very light.

AGE:

- Find something that is very old.
- Find something rotten and mouldy.
- Find something just beginning.

TECHNOLOGY:

- Find a place where you could build a hut.
- Find a place that would be good for a campsite.

HEIGHT:

- Find the tallest thing around. How tall do you think it is?
- Find something that does not grow very tall at all. How tall do you think it is?

Name: _____

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Nature Activity Cards #2



ANIMAL SIGNS:

- Find a place where a bird has been.
- Find a place where an insect has been.
- Find a place where a mammal has been.

MOVEMENT:

- Find something that moves - then move like it does.

SMELL:

- Walk among the trees and see how many different smells can be identified. Describe the smells.
- Find a sweet smell.
- Find an unpleasant smell.

LISTEN:

- Sit in a quiet spot and see how many different sounds you can hear.

CHANGE:

- Find something that is changing.
- Find something squashed or split.
- Find something that is dried out.
- Find something that is injured.

TRACKING:

- Find evidence of a bird or animal that has been there before you.

SHAPE AND TEXTURE HUNT:

- Brainstorm a list of shapes and textures you might find in the bush. Take a collecting bag and look for objects to match the shapes and textures on your list.

MINI-MAGNIFIER WALK:

- With a partner, select an area of bush. One of you will choose a place to start and take one giant step. At that point, the other partner will use the magnifying glass to view an object and describe it. Keep taking steps and observing until you have completed a six step mini-magnifier walk with your partner.

BIRD'S EYE VIEW:

- Lean back and look straight up through the trees to the sky. Pretend you are a flying bird flying overhead. What would the trees look like to you.
- Back at school, draw a picture to show a Bug's Eye View or a Bird's Eye View of the bush you visited.

BIRD'S EYE VIEW:

- Spread your feet and bend your head close to the ground. Pretend that you are an ant or a beetle. What would things look like to you? Tell your partner what it looks like.



Living Things



Because scientists have observed the world around them, they have decided that there are two main categories of things – living things and non-living things. Living things move, respire, sense, grow, reproduce, excrete, and feed. These categories can help us to understand and look after God's world.

	MOVES	RESPIRES	SENSES	GROWS	REPRODUCES	EXCRETES	FEEDS
WATER							
FISH							
TREES							
INSECTS							
ROCKS							
CATS							
HUMANS							
FIRE							

What can humans do that other living things cannot do?

What can God do that humans cannot do?

Name: _____



key areas of investigation

We are investigating:

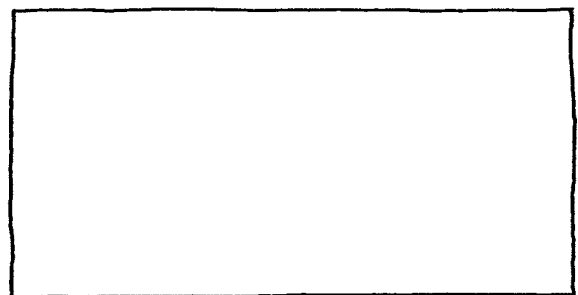
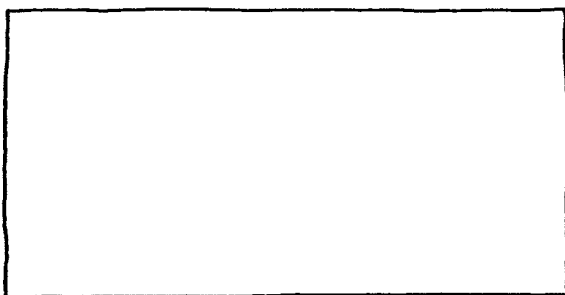
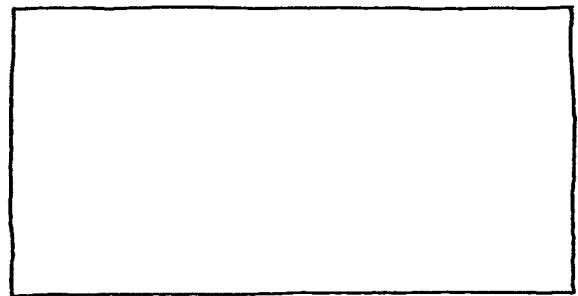
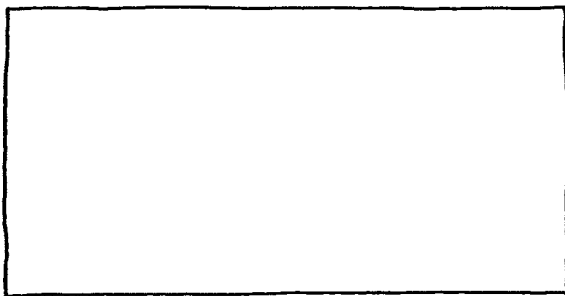
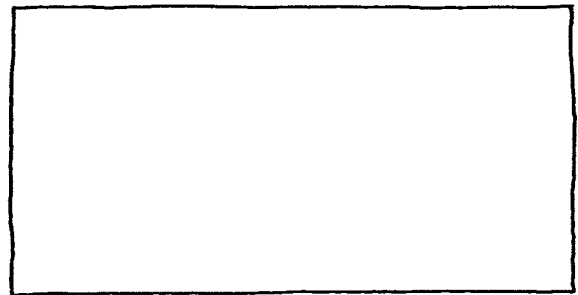
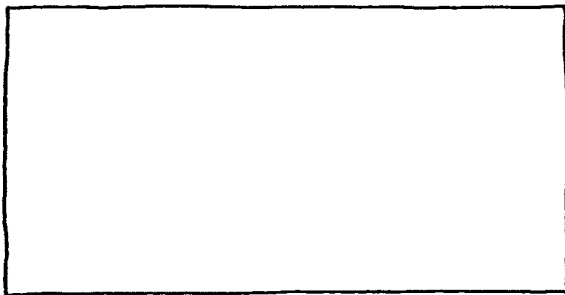
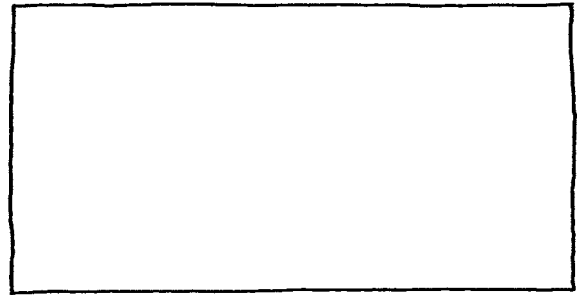
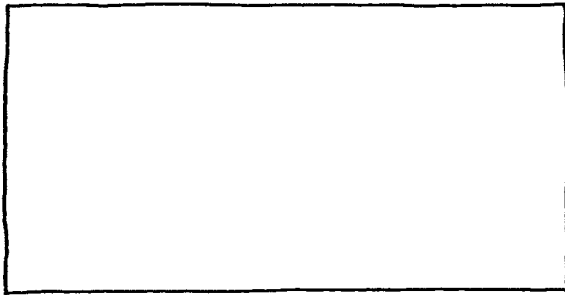
- 1.0** Why are habitats important for plants and animals?



Living Things in My Habitat



Observe living things in your habitat and do observational drawings in the shapes below. Name each drawing. Discuss how their features help each living thing stay alive.





My Plant Investigation



EXPERIMENT

WHAT I WANT TO KNOW

WHAT I NEED TO HELP ME FIND OUT

WHAT I WILL DO

WHAT HAPPENED

MY DIAGRAMS

WHY I THINK THIS HAPPENED

Name: _____



key areas of investigation

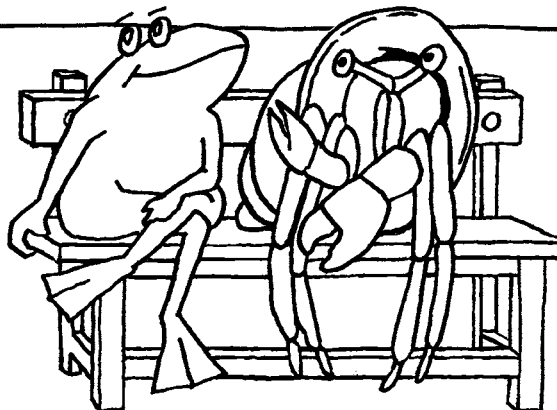
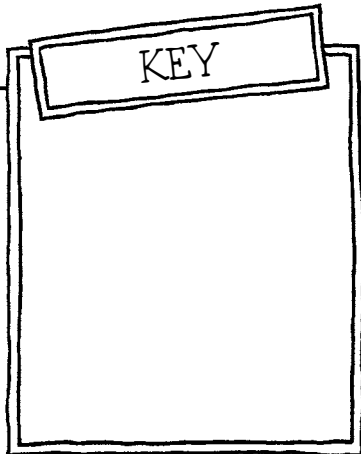
We are investigating:

- 2.0** What can we learn about plants and animals in their habitats?

My Living Community



Draw a map of your chosen habitat.



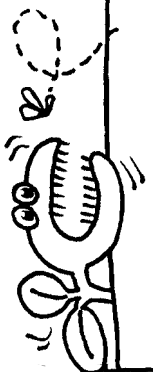


Plants in my Community



Look at plants in your community and complete the table below:


SAMPLE 4	SAMPLE 3	SAMPLE 2	SAMPLE 1	A DIAGRAM OF MY PLANT AND ITS NAME	WHERE I FOUND THE PLANT	DISTINGUISHING CHARACTERISTICS OR FEATURES	HOW THE PLANT HELPS SOMETHING IN ITS COMMUNITY



Animals in my Community



Look at animals in your community and complete the table below:

SAMPLE 4	SAMPLE 3	SAMPLE 2	SAMPLE 1	 <p>A DIAGRAM OF MY ANIMAL AND ITS NAME</p>	<p>WHERE I FOUND THE ANIMAL</p>	<p>DISTINGUISHING CHARACTERISTICS OR FEATURES</p>	<p>HOW THE ANIMAL HELPS SOMETHING IN ITS COMMUNITY</p>

Name: _____



key areas of investigation

We are investigating:

3.0 How do plants rely on animals in certain habitats?

Seeds

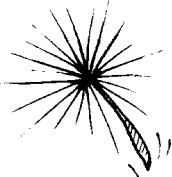


It is amazing how seeds can travel to a new area to grow. They may travel on the wind, by water, on animals or people, or even on car tyres.

Find out some of the interesting ways that seeds travel and write them in the boxes.



COCONUT



DANDELION



APPLE SEED



key areas of investigation

We are investigating:

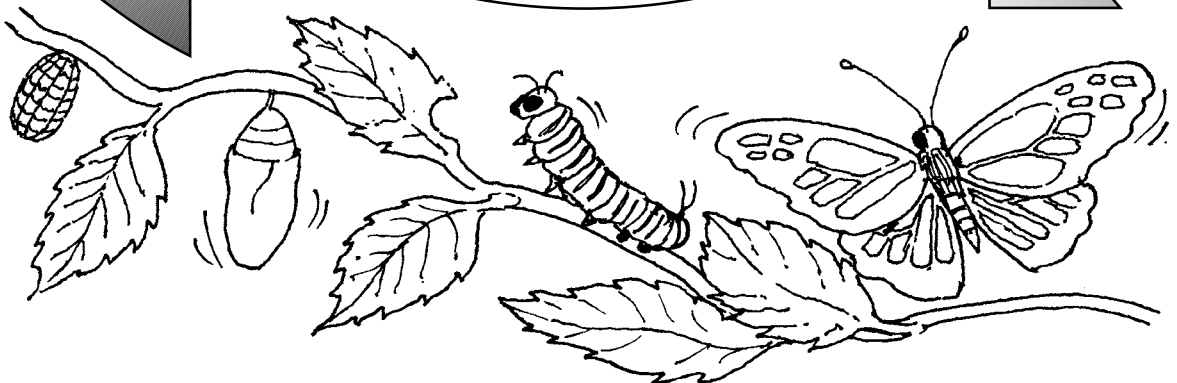
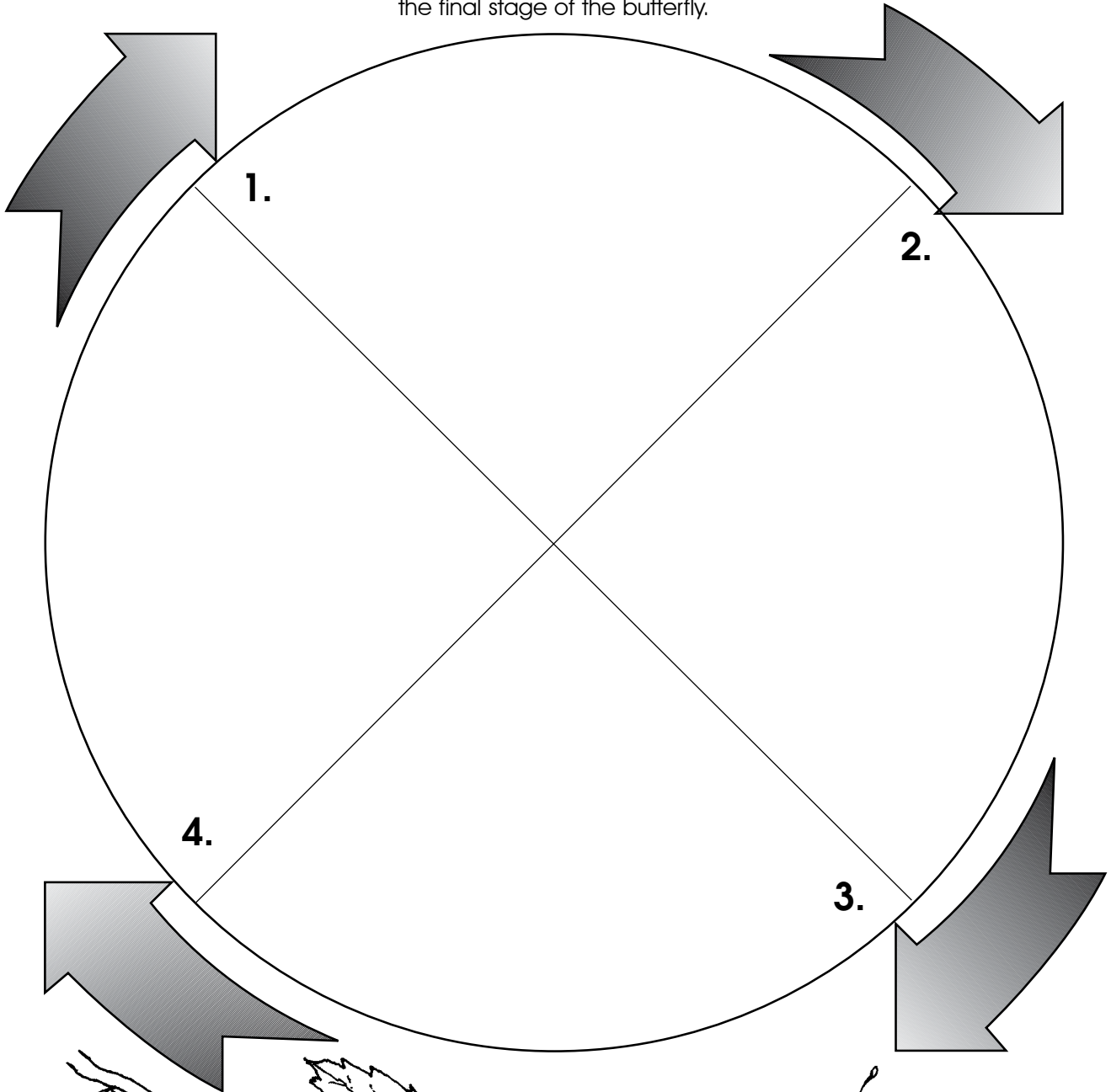
4.0 How do animals rely on plants in certain habitats?



Butterflies



Butterflies go through an amazing process before they finally become butterflies. This is called metamorphosis. Draw and label each stage that the butterfly goes through from the first stage of the egg right through to the final stage of the butterfly.



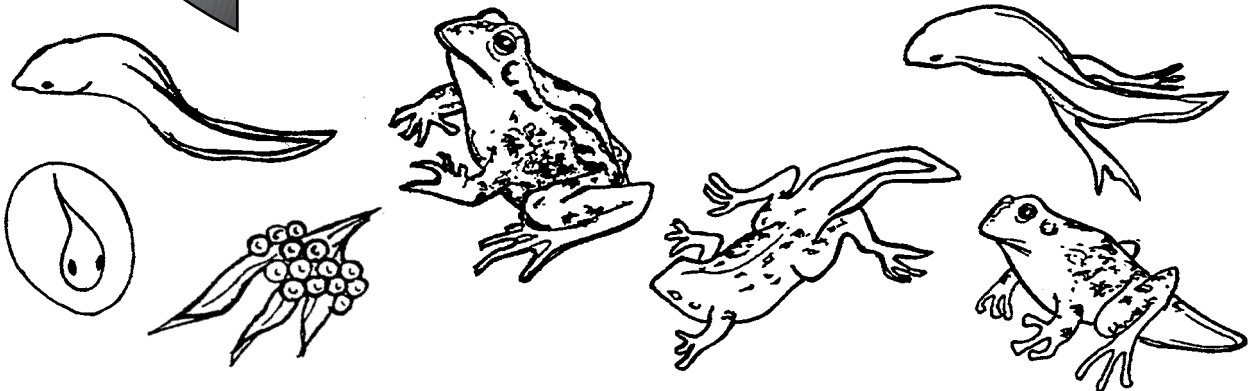
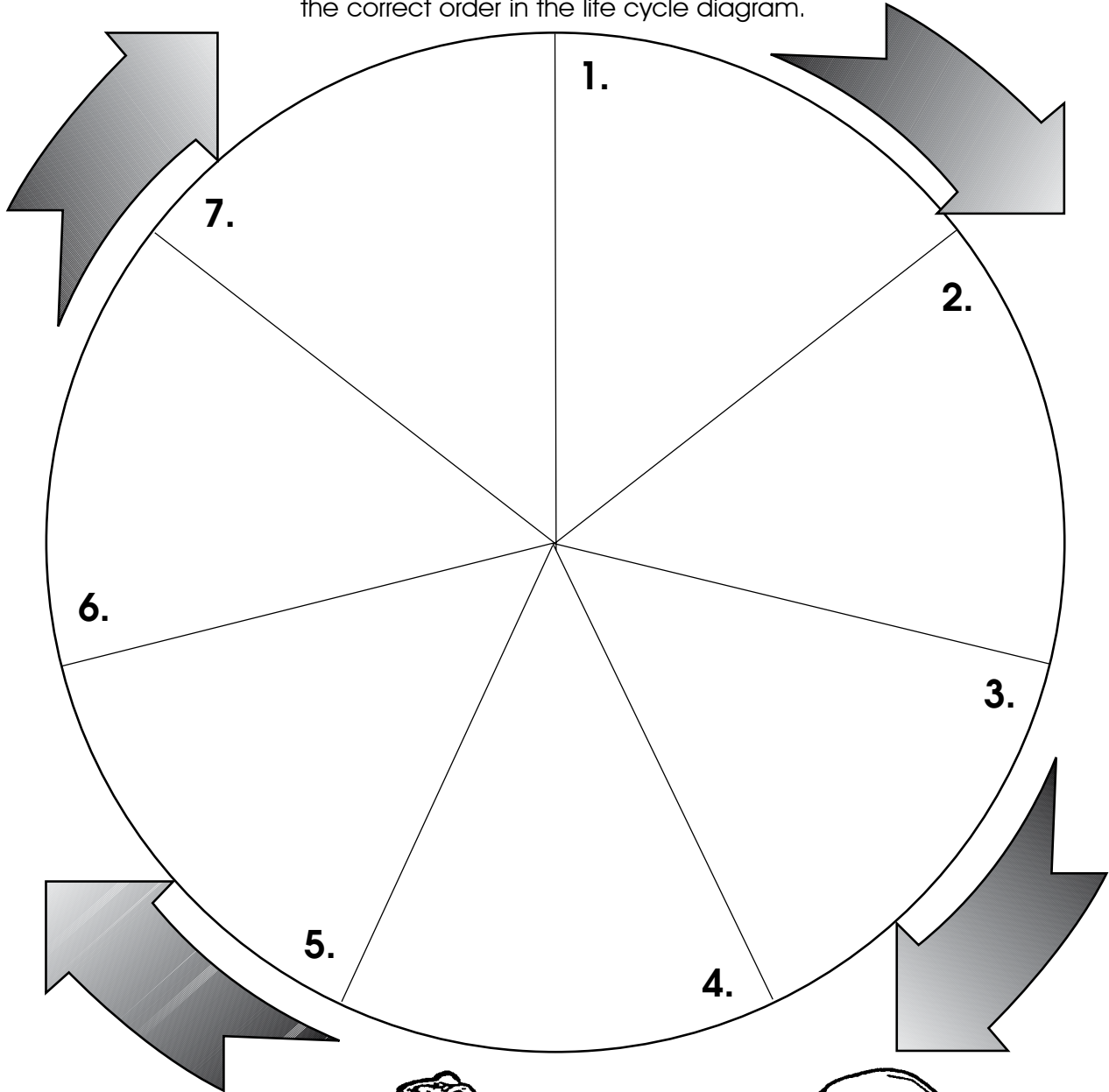


Frog Life Cycle

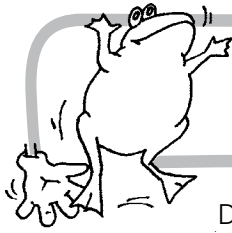


Here are some pictures of the life cycle of a frog.

Cut out the pictures and put them in the correct order in the life cycle diagram.



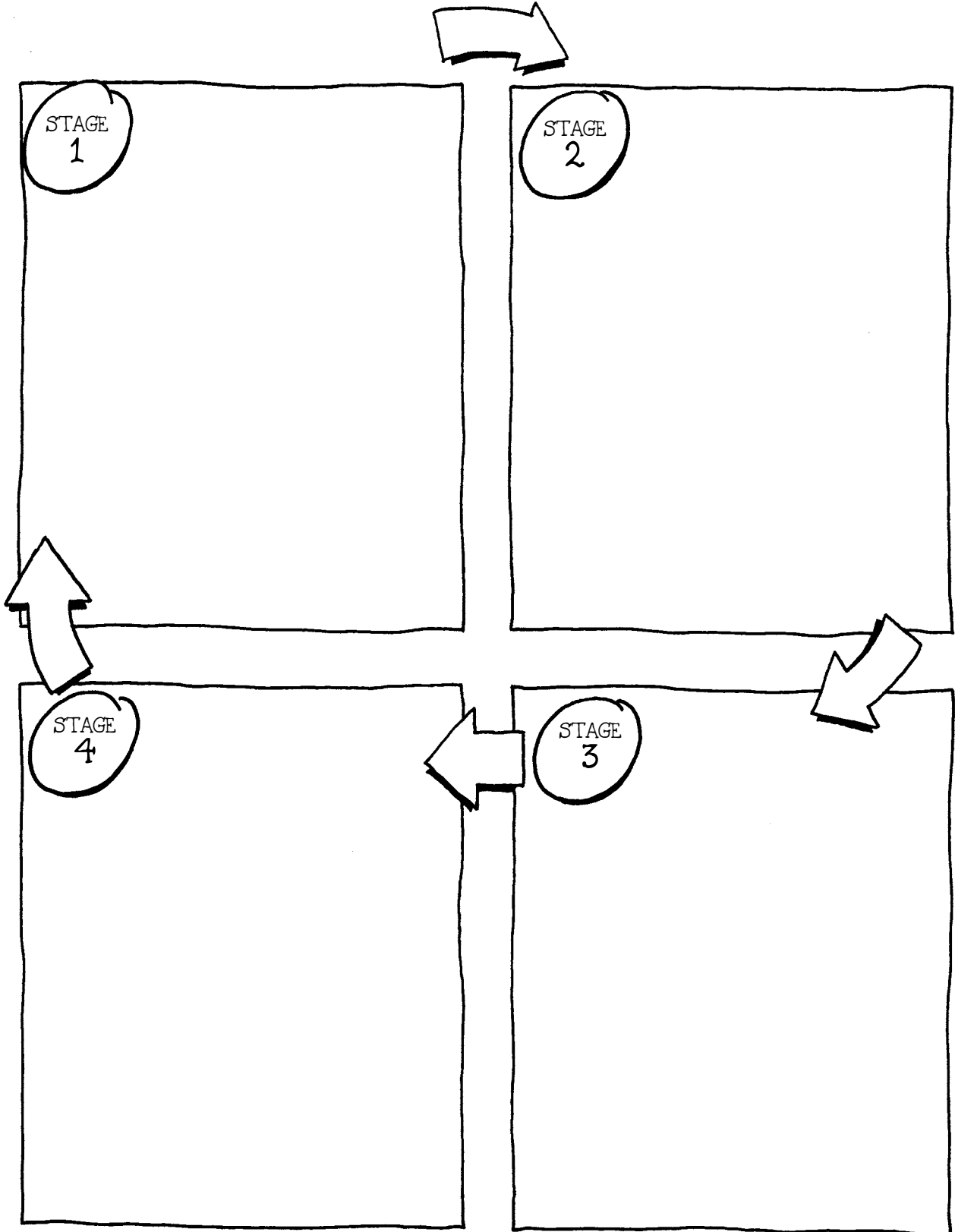
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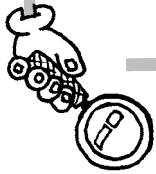
Life Cycle



Draw all the stages of the life cycle of a particular creature below:



Observing Plants



Collect a specimen of a plant and study it carefully.
Fill in the boxes with the information you find out.



THE PLANT

SKETCH OF A PLANT:

The plant stands _____ cm tall.

Description of plant: _____

THE LEAF

SKETCH OF A LEAF:

The leaf size is _____ mm wide

and _____ mm long

Description of leaf: _____

The leaf helps the plant stay alive by:

THE SEED

SKETCH OF SEED:

The seed is _____ mm wide/long

Its shape is _____

It is found _____

Description of seed: _____

The seed helps the plant stay alive by:

THE FLOWER

SKETCH OF FLOWER:

The flower diameter is _____ mm

Its petals are _____

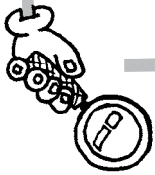
Its colour is _____

The flower helps the plant stay alive by:

Name: _____

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Observing Animals



Observe an animal.
Fill in the boxes with the information you find out.

THE ANIMAL

The animal is _____ cm long

Description of animal: _____

SKETCH OF AN ANIMAL:

THE LEGS

The legs are _____ mm long

There are _____ legs

Description of the legs and feet:

They help this animal stay alive by:

SKETCH OF THE LEGS:

THE BODY

The body is _____ mm wide/long

Its shape is _____

Its function is _____

Description of body: _____

SKETCH OF THE BODY:

THE HEAD

The head is _____ mm

Its features are _____

Its colour is _____

Sight and hearing help it stay alive by:

SKETCH OF THE HEAD:

Animals



Choose animals from your community and write their names in the appropriate column.



EATS PLANTS & ANIMALS
(OMNIVORE)

EATS ANIMALS (CARNIVORE)

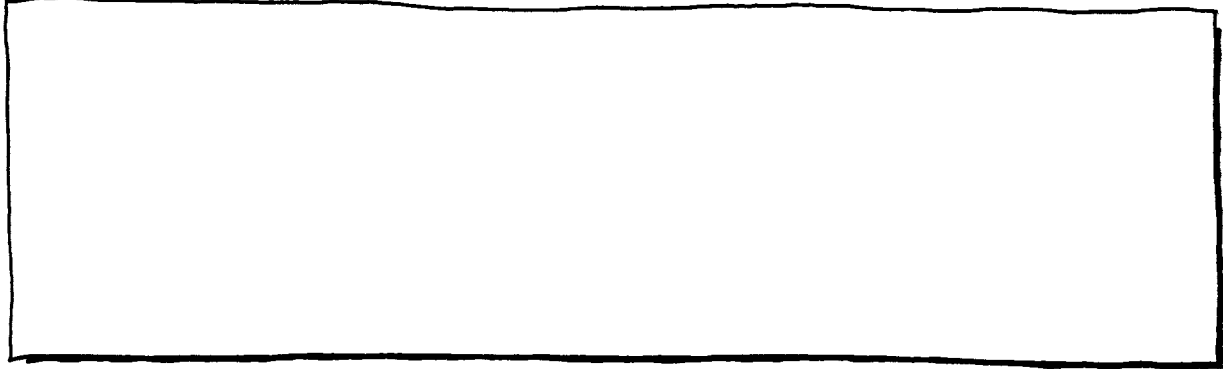
EATS PLANTS (HERBIVORE)

Name: _____

Animal Tracks



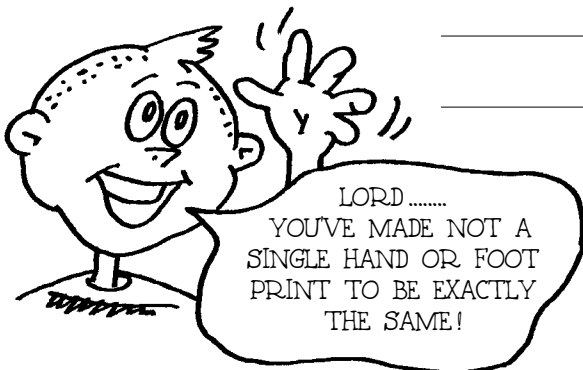
I saw some animal tracks that looked like this:



I think they were made by: _____

I think the animal has feet like this so it can: _____

Other animals in my community which have similar features are: _____





Grouping Animals



One way we can group animals is by the covering they have to keep them warm.
Name and draw animals in each box and tick the ones that are mammals.

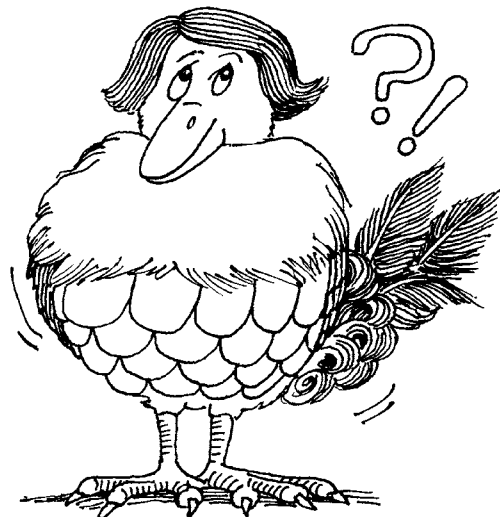
HAS FUR

HAS HAIR

HAS WOOL

HAS FEATHERS

HAS SCALES



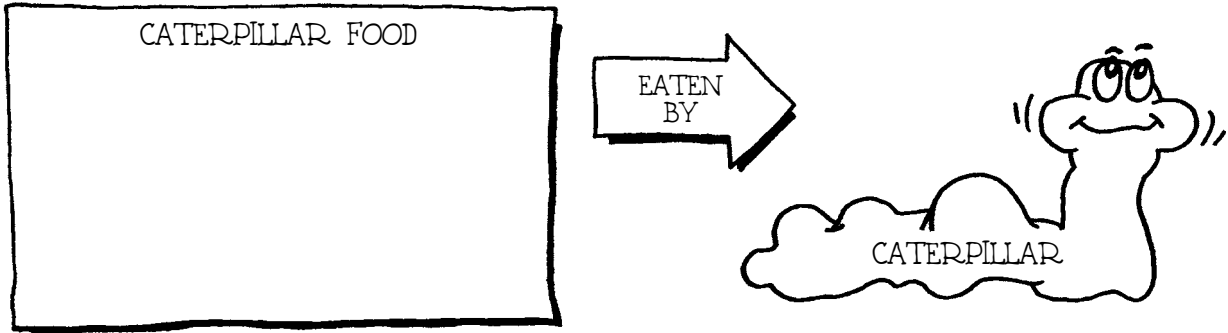
Name: _____

Food Chain

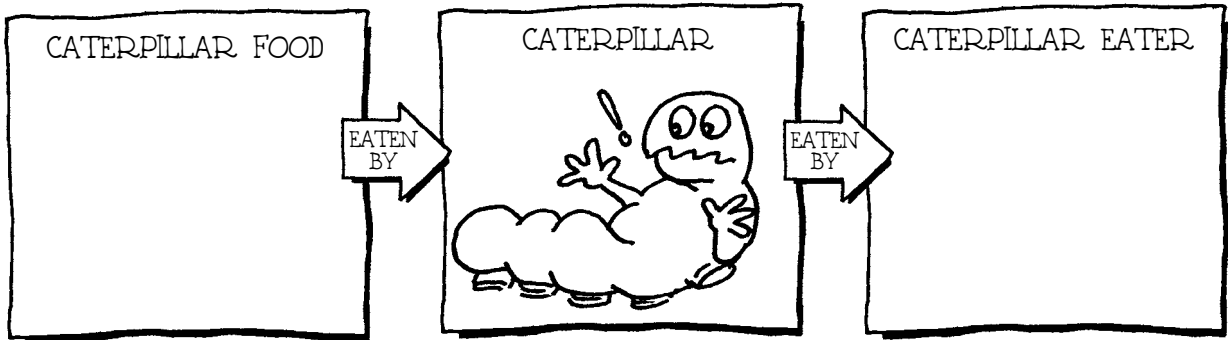


Draw in the boxes to create food chains that show how energy is passed through creation.

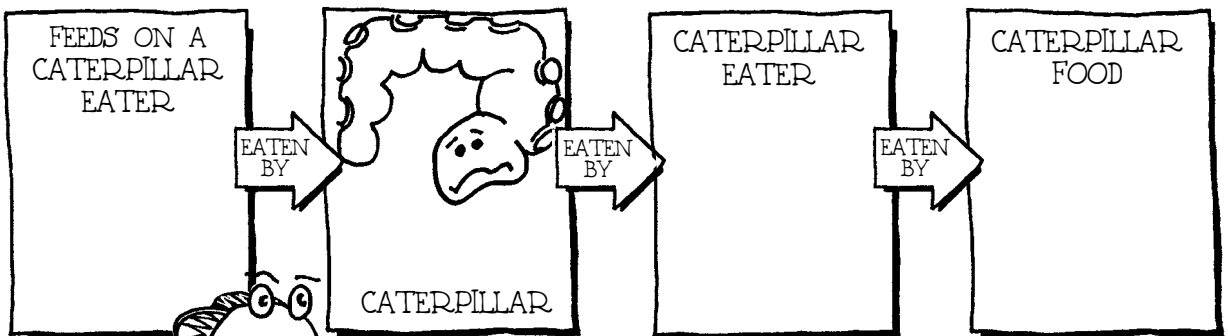
What does a caterpillar eat? _____



What is the producer? _____



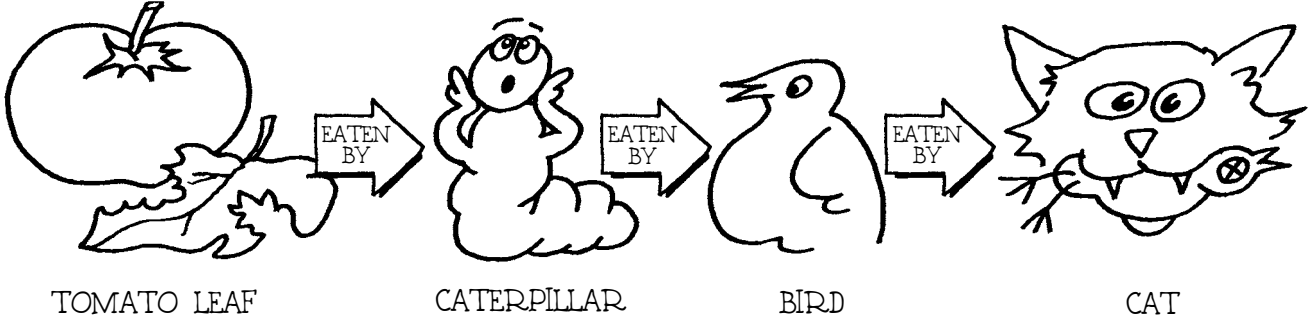
What are the consumers? _____



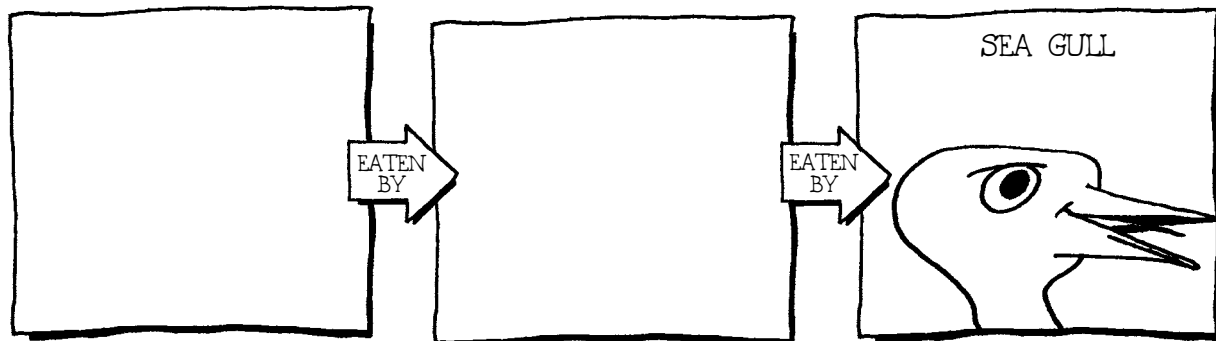
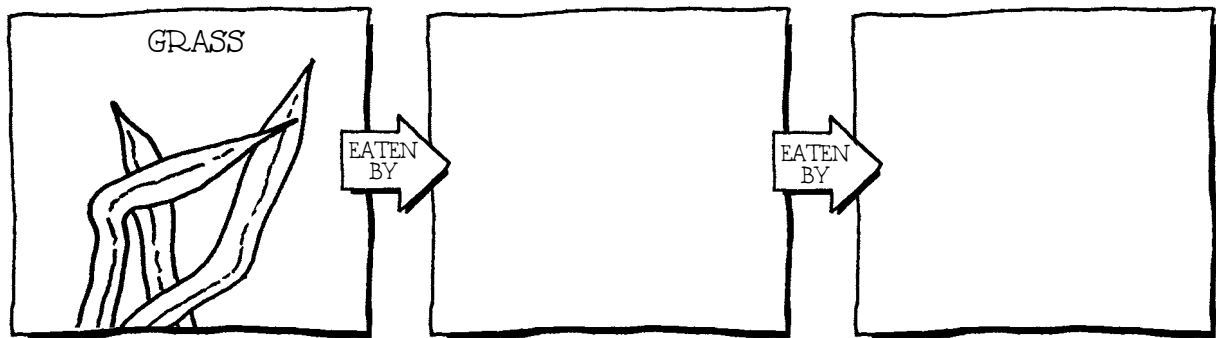
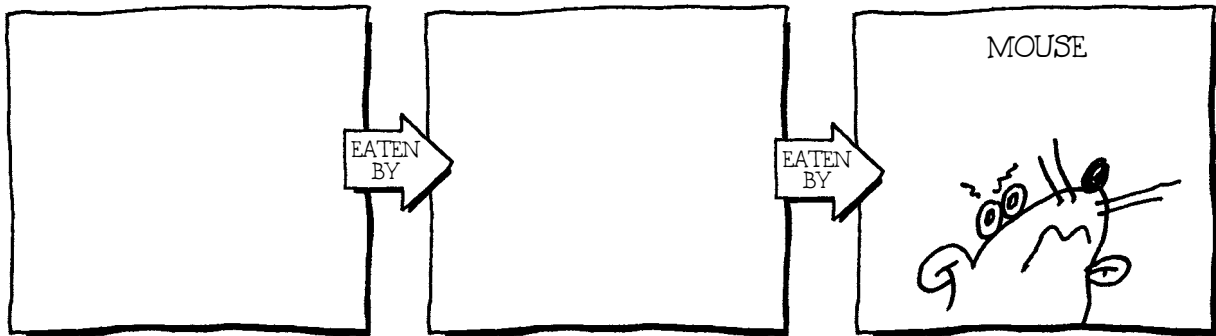
Building Food Chains



Here is one way that you could build the caterpillar food chain.



Now try to build a food chain for each of the following:



Name: _____

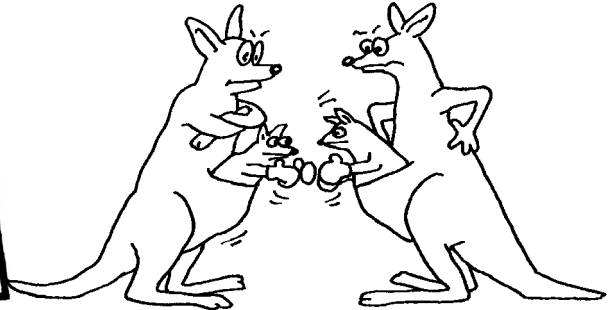


Populations Interact



Populations live together as communities. When something happens to one population in a community, all the other populations are changed in some way.

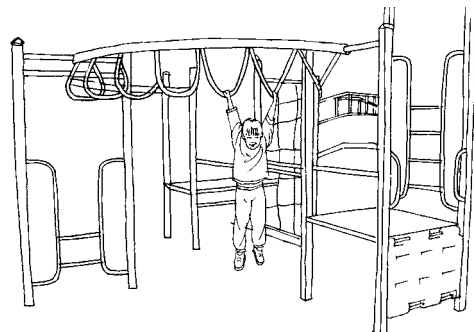
POPULATIONS COMPETE FOR SPACE
CONSIDER THIS:
We need a bigger playground. The best area would need to be excavated and a group of trees cut down.



What would happen to the children if they kept using their old and very small playground?

What would happen to the birds and animals living in the ground if the school built the new playground?

What would you do? Why?

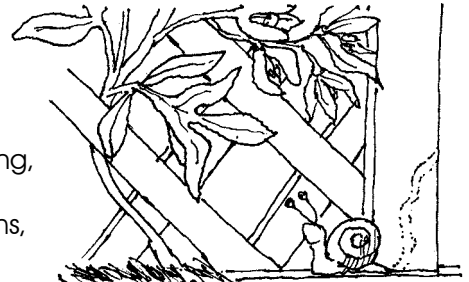




Little Fellow



I saw you late last night,
Scuttling under the trellis,
By the purple-flowered petrea,
And I was pleased to know,
That you'd be feasting, gorging, devouring,
Slushing and squishing,
The snail brigade that ravages and roams,
Annuals in my garden.



I saw you this rain-filled morning,
This Sunday morning,
This new day of the week,
Lying bloodied, blown and alone,
Next to the white line.



You old road hog,
Confused by the manmade monster
Hit by its rushing rubber tyres.
They didn't stop to pick up your precious body,
Left you an undignified death,
Splayed for all to see.

I picked you up this sun-filled afternoon my friend,
And looked at your prickly body.
I wore gloves because they say you're bug riddled,
I didn't want to abandon you to the road.

I looked at your quiet form in death.
You are beautiful with your small, bright eyes,
Your sharp-pointed nose,
And those perfectly-formed padded little feet.

I couldn't toss you onto the grass verge leaving you for the flies,
And their maggots to devour.
Or perhaps for a dog to sniff,
Or people to pass by with disdain as they breathed in,
Your rotting corpse.

No, instead, I took you to the garden you had roamed in life,
And there in death I dug for you a grave.
The soil soft and warmed by the tears from above,
And the sun,
Warmed for you a resting place.

I didn't leave you lying on the road,
I remembered what you'd done,
And the surprise and delight we had at watching you,
Minding my garden that still spring night.

Robyn Burgess



Name: _____

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Huia



Down in the gully
 Where the stream runs clear,
 Softly calls the mate
 Of the huia, so dear.



Hui, hui, huia,
 Wings through the trees,
 Hui, hui, huia,
 Carried in the breeze.



Down in the gully
 Where the stream runs slow,
 Alone calls the huia
 Where the bush possums go.

Hui, hui, huia,
 Wings through the trees,
 Hui, hui, huia,
 Carried in the breeze.



Down in the gully
 Where the stream used to be,
 No more calls the huia
 In the bird lost trees.

Hui, hui, huia,
 No ghostly reply
 Hui, hui, huia,
 Not even a wind-hushed sigh.



Robyn Burgess

True or False



Answer true or false to the statements about living and non-living things.

All living things breathe TRUE / FALSE

All living things can run TRUE / FALSE

Living things must have food to survive TRUE / FALSE

Living things reproduce TRUE / FALSE

Flowers are a living thing TRUE / FALSE

Water is a living thing TRUE / FALSE

Non-living things can move TRUE / FALSE

Non-living things can grow TRUE / FALSE

Non-living things help things to survive TRUE / FALSE

Non-living things make more of themselves to keep going TRUE / FALSE



Name: _____



God's Plan for Harmony & Balance



Ways plants help our environment



Ways plants help people



Ways plants help animals

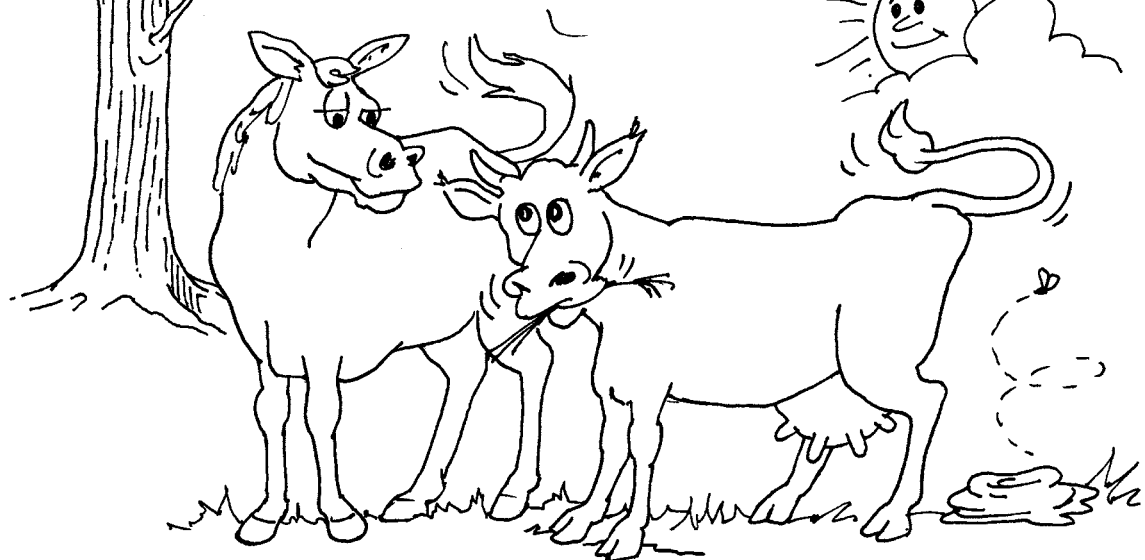


God's Plan for Harmony & Balance

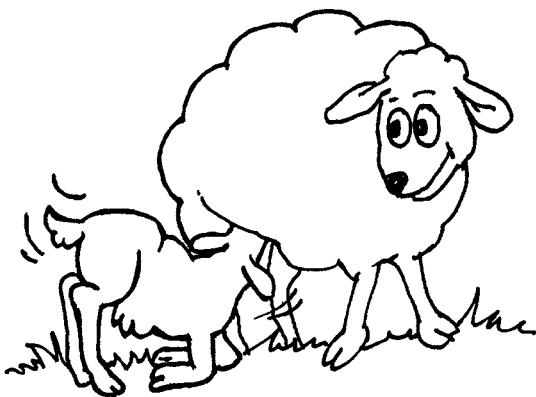


Ways animals help our environment

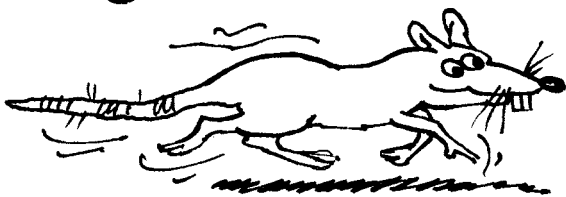




Ways animals help plants



Ways animals help people



Name: _____