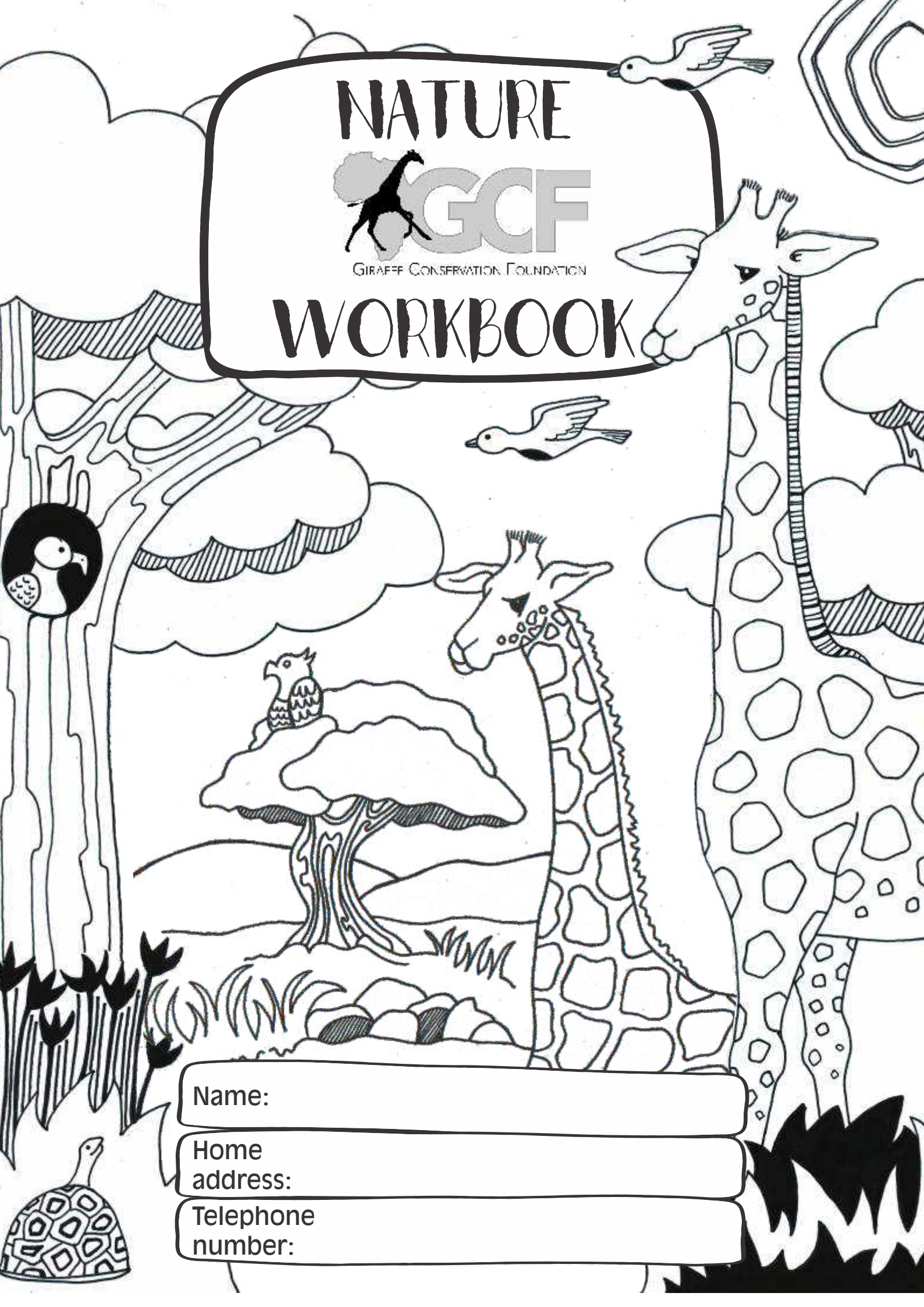
NATURE WORKBOOK

GCF

Giraffe Conservation Foundation



Name:

Home address:

Telephone number:

GIRAFFE CONSERVATION FOUNDATION

Building a culture of environmental
awareness, social responsibility and action,
and equipping our future leaders with the
skills to live sustainably for a better environment.

This Nature Workbook was developed by the
Giraffe Conservation Foundation (GCF).

Written by Marie Louise Mott-Adams, Rachel du Raan and the
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Graphic Design by Suzi Seha

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This Nature Workbook was developed by the Giraffe Conservation Foundation,
and supported by

GALANTHUS FOUNDATION

the waterloo foundation

NATURAL SELECTION



Hi! I am LOPIE

I am from the Giraffe Conservation Foundation. Together with my colleagues, we protect and support the safety of giraffe in 16 African countries.



I am an Angolan giraffe. I live in the wilderness in the far north-western part of Namibia, where the rocks are a deep orange colour and most of the big trees grow on the banks of river beds.

We teach many children about their environment and the wonders of the natural world, as well as those things that threaten our natural world. In this Nature Workbook, we are going to share and explore lots of environmental facts and activities with you.

This is your own Nature Workbook. There are many drawings to colour in, interesting and wonderful things to learn and investigate, and exciting activities for you to do.

EXTRA PAPER OR NOTEBOOK

For some of the activities and investigations, you need extra paper or a notebook so that you can record your answers and drawings.



You can collect scrap paper and make it into a little notebook for yourself.

If you are unsure about what the underlined words mean, you can find their meanings in the glossary at the back of your workbook.



- Enjoy learning and exploring.
- Do not hesitate to ask questions.
- Be a part of looking after the environment around you.

QUIZ YOURSELF

How environmentally friendly are you? (Tick your answers in the boxes.)

1 While brushing your teeth, do you let the water run?

- a) No ☐
- b) Sometimes ☐
- c) Yes ☐

2 Do you switch off the lights whenever they are not needed?

- a) Sometimes ☐
- b) No ☐
- c) Always ☐

3 Do you take your own shopping bags to the shops to avoid using single-use plastic bags?

- a) Yes ☐
- b) Sometimes ☐
- c) No ☐

4 Do you litter?

- a) Sometimes ☐
- b) Never ☐
- c) Yes ☐

5 Do you switch off the television and other appliances at the wall socket whenever they are not in use?

- a) Sometimes ☐
- b) No ☐
- c) Always ☐

6 How do you feel about insects?

- a) If they avoid me, I will avoid them ☐
- b) I do not like them, and sometimes I kill them ☐
- c) They are an important part of the natural world ☐



7 How many of the light bulbs in your home are low energy ones?

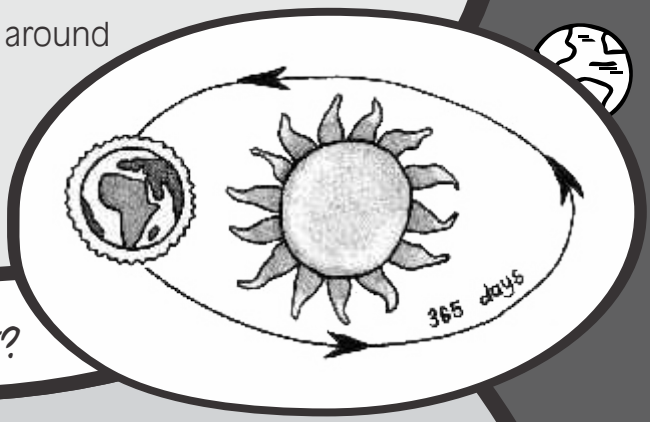
- a) All of them ☐
- b) None ☐
- c) Some of them ☐
- d) I do not know ☐





PLANET EARTH

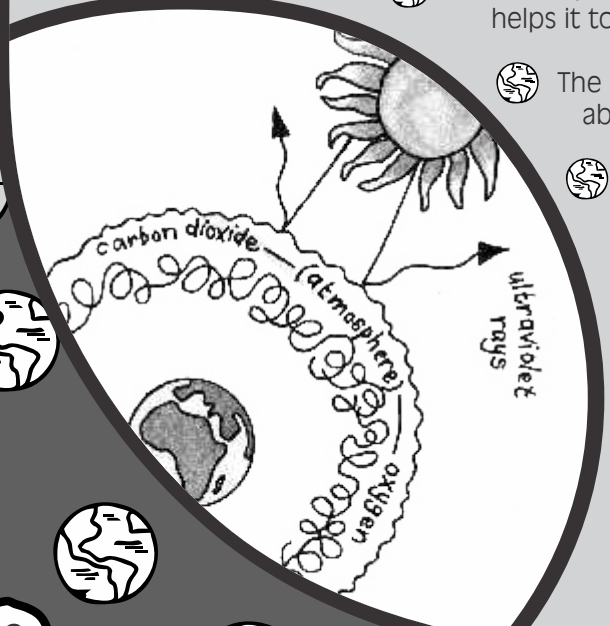
- Our planet, Earth, is a very special place.
- In our solar system, there is a group of planets that travel around the sun; Earth is one of these planets.
- Earth is the third planet from the sun, and it is the fifth largest planet in the solar system.
- Earth travels all the way around the sun in 365 days – this is known as a Year (January to December).



Why is it so important to look after our planet?

As far as we know, Earth is the only planet that supports life. This is because Earth has two very important things that all living creatures and plants need to survive: lots of water and an atmosphere.

- Earth is surrounded by a layer of gases called the atmosphere.
- The atmosphere is the air that plants and animals breathe. Air is made up of many gases, but the two most important gases are oxygen and carbon dioxide.
- The atmosphere is very important because it protects all life on Earth and helps it to survive.
- The atmosphere surrounds Earth like a big blanket. This blanket absorbs heat from the sun which helps Earth to stay warm.
- Some of the sun's rays are harmful; these rays are called ultraviolet rays. The atmosphere protects Earth from the sun's harmful ultraviolet rays.
- The atmosphere also helps to stop most of the meteorites from hitting Earth. Meteorites (we also call them shooting stars) are lumps of rock that come from outer space. When these meteorites reach the atmosphere, most of the time they burn up. Sometimes though, they make it through the atmosphere but usually they are small, like a pebble.



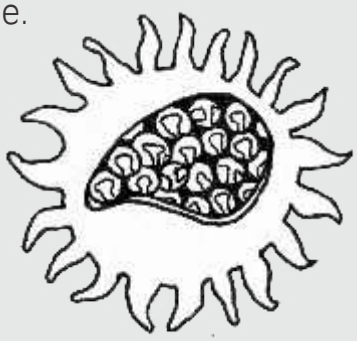


DID YOU KNOW?

Up to 20 000 meteorites can fall to Earth each year. Luckily most of them are very small, like a pebble.

Earth is about 4.5 billion years old.

The sun is so huge that more than 1 million Earths could fit inside it.



The light from the sun takes about 8 minutes to reach us.

The sun is so far away that if you tried to drive there, driving at 100 kilometres per hour, it would take you 170 years to reach the sun.

It is very important to understand the natural world and how to keep it safe and healthy, because we have nowhere else to live.



INVESTIGATE

The atmosphere is divided into five layers.

Find out the names of these five layers that protect Earth, and how far up they are from Earth's surface. To start you off, the first layer is called the:

1. **Tropo**sphere, **18** kilometres from Earth's surface
2. _____sphere, _____ kilometres from Earth's surface
3. _____sphere, _____ kilometres from Earth's surface
4. _____sphere, _____ kilometres from Earth's surface
5. _____sphere, _____ kilometres from Earth's surface

Answers: 2. **Strato**sphere, **50** kilometres 3. **Meso**sphere, **80** kilometres 4. **Thermo**sphere, **690** kilometres 5. **Exo**sphere, **800** kilometres

THE NATURAL WORLD

Life on Earth began millions of years ago.

The natural world is full of millions of different kinds of beautiful, amazing and surprising plants and animals that live in every corner of our planet.

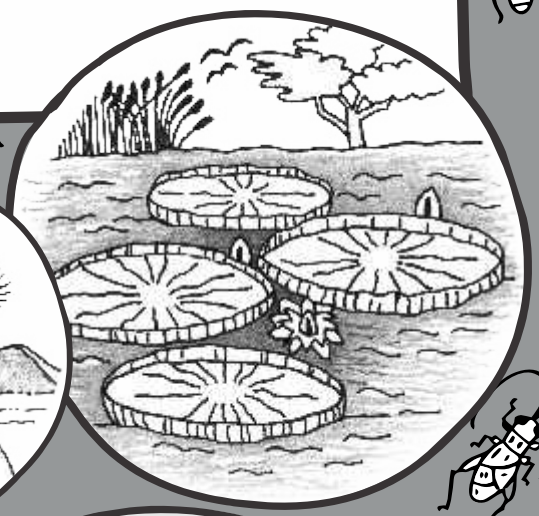
They range in size from tiny plants and animals that are too small to see with the naked eye, to large animals like the elephant and enormous trees like the Baobabs in Africa.

Whether these plants and animals live in the deepest, darkest parts of the ocean; in dry, sandy deserts; in wet, rainy forests; or in places with very cold winters and lots of snow, they have all found ways to survive.











DID YOU KNOW?

The Fangtooth is a scary-looking fish that lives in the deep parts of the ocean. Their teeth are so long, they cannot close their mouths properly.

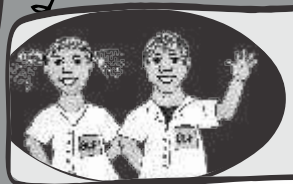
The Red Kangaroo in Australia can cover more than 8 metres in one leap.

Vultures can fly higher than the world's highest mountain. They can go as high as 11 kilometres, which is 2 kilometres higher than Mount Everest.

The Amazon water lily has enormous leaves. They measure 2 metres across, and they look like large plates floating on the water.

Camels' eyelashes are 11 centimetres long. Their long eyelashes stop the sand from getting into their eyes during windy desert sand storms.





INVESTIGATE

How many animals and plants do you know in your country?

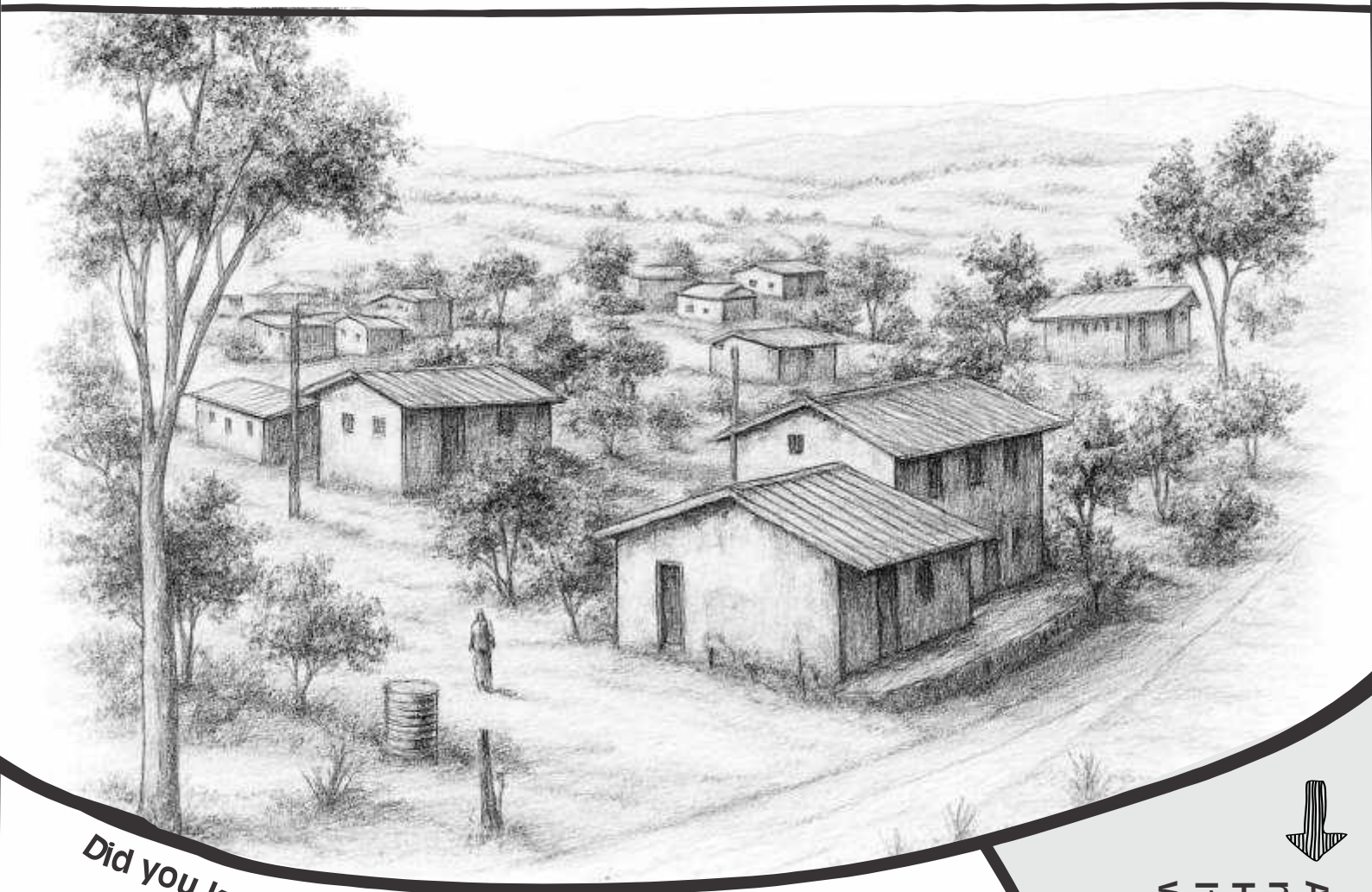
In your notebook, make a list of all the animals and plants you know about or have heard about in the area where you live.

Let's explore all the different things that make up the natural world.

ENVIRONMENT

What do you think of when you hear the word environment? Wherever you are right now, look around you…

An environment is where you are and everything that is around you. Your environment can be your home, your garden, your school, a hospital, or somewhere out in nature.



Did you know that different environments can change how you feel and how you do things?

look

touch

wet

cold

listen

smell

happy

feel

afraid

dry and warm

An environment includes living and non-living things.
How can we tell the difference?
It is easy when we know what to look for.

LIVING THINGS

Living things are alive.
They breathe, grow and use energy, and they adapt to their environment.

BIRDS
INSECTS
PLANTS
PEOPLE
ANIMALS

NUTRITION

All living things need food for energy. Energy allows humans, animals and plants to grow. Without energy, we would not be able to carry out our daily activities like running, playing, working and thinking. People and animals get energy from the food they eat. Plants make their food and energy by combining sunlight and carbon dioxide from the air with water and minerals from the soil (this is called photosynthesis).

GROWTH

All living things become larger in size. Think about how tiny you were when you were born, and look at yourself now. Think about the new green grass that grows after the first rains.

ADAPTATION

All living things are able to change according to the environment they are in. For example, when you are in a cold environment, you wear a jersey and long pants; when it is hot, you wear short-sleeved shirts. When it is too hot, some animals stay underground, hide in caves or lie in the shade; when it is very cold, most animals will find a comfortable place to bask in the sun. Plants like the Welwitschia have adapted to living in the Namib Desert: they have very long roots which are able to reach the water deep under the ground.



SENSITIVITY

All living things are able to sense what is happening in their environment. For example, living things respond to changes in sound and temperature; they react when they are touched; and plants will always grow towards the light.

EXCRETION

All living things are able to get rid of unwanted substances from their bodies. People and animals do this by pooing, peeing and sweating. Plants release unwanted substances through their leaves and stems.

REPRODUCTION

All living things are able to make new life (reproduce). Humans and animals give birth to babies, other creatures such as reptiles and birds lay eggs, and plants grow again in the next season from the seeds they have made.

RESPIRATION – BREATHING

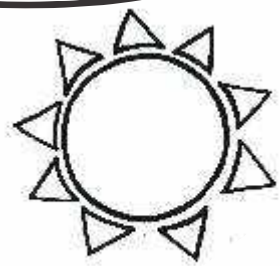
All living things need to get energy from food to stay alive. The process of producing energy is called respiration, and it is done by using oxygen.
Humans and other animals need to breathe for respiration to take place. The oxygen that is breathed in joins with sugar inside the body's cells, and this makes energy. Fish do this by opening and closing their gills. When animals breathe in, they take in oxygen; and when they breathe out, they release carbon dioxide from the body. Although plants do not breathe the same way as animals, these gases still need to pass in and out of their leaves for them to stay alive. Plants are important because they use carbon dioxide and release oxygen.

MOVEMENT

All living things are able to move from one position to another. People move from one area to another. For example, on a school day, you leave home in the morning and travel to school. Animals move in the same way as people; they walk and run. Plants also move; their branches, stems, and leaves swing about when it is windy.

NON-LIVING THINGS

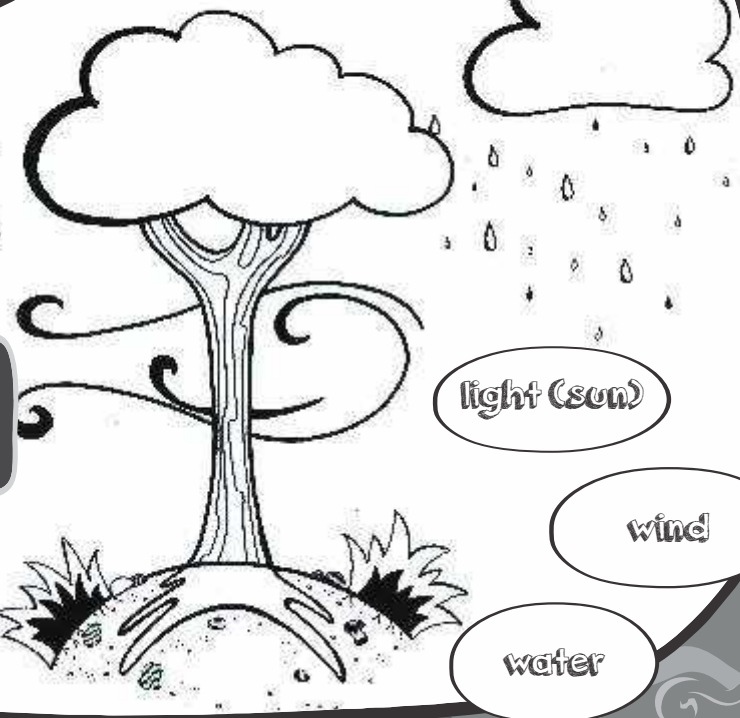
Non-living things are not alive. They are found naturally in the environment.



soil

air

temperature (hot/cold)



light (sun)

wind

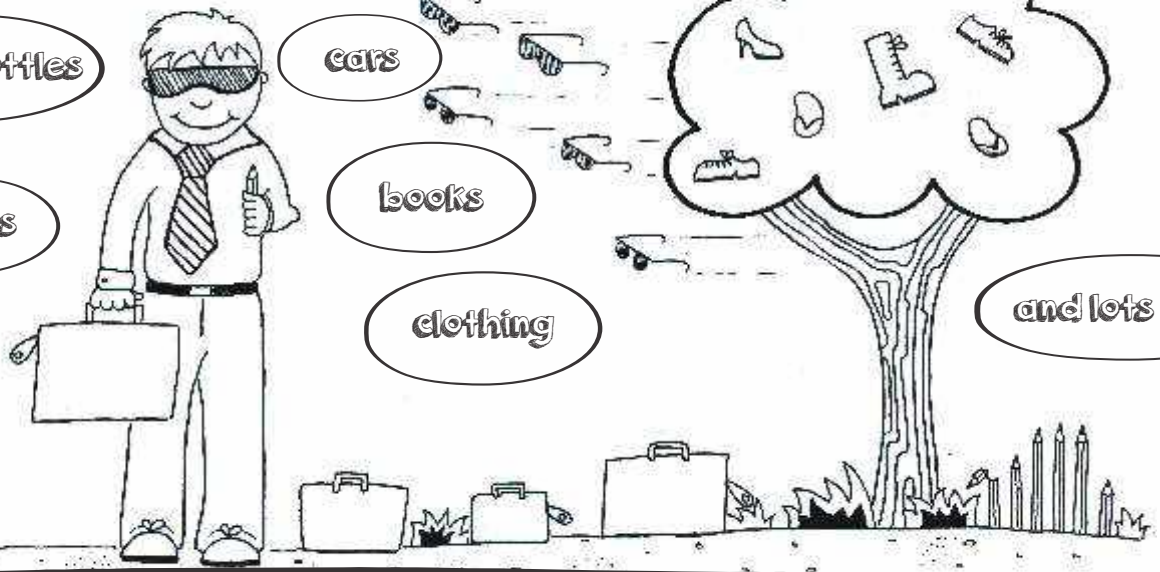
water

Non-living things do not breathe, they are not made of cells, they do not eat and grow, they cannot feel, they cannot reproduce, and they do not need to adapt to the environment.

Non-living things are important because all living things need them to survive. For example, trees (living) need the soil (non-living) to be able to grow.

MAN-MADE THINGS

Man-made things are also non-living, but they are NOT found naturally in the environment.They are here because people make them.



plastic bottles

cars

pencils

books

clothing

pens

and lots more

✓ Some man-made things are **good**. They can help by keeping us and our environment healthy and safe. For example, **machines that measure the weather help us to know when big storms are coming and houses give us a safe place to live.**

✗ Some man-made things are **bad**. For example, **litter and waste harm the environment and they can also make us sick.**

THE FIVE BASIC NEEDS

All living things have five basic needs. Without these, they would not be able to survive.



SUNLIGHT

This is probably the most important need for all living things because it is the source of all energy. Plants need sunlight for the energy it gives them to grow. Humans and animals need sunlight to survive, because it gives light, warmth and nutrients.

We also need sunlight to grow the fruit and vegetables that we eat.

AIR

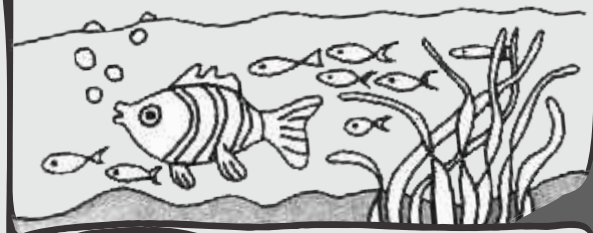
Air (the atmosphere) is made up of many gases, but the two most important gases are oxygen and carbon dioxide. Without oxygen, animals will die, and without carbon dioxide, plants cannot survive.



WATER

Animals need water so that they can perform important functions like digestion, and the cells in their bodies need water to work properly. Plants need water to grow and make seeds or fruit. Water is also home to many kinds of plants and animals.

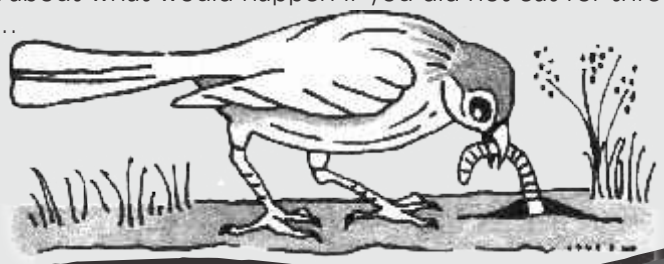
If you think about humans and animals like fish, we all need water, but for different reasons. For example, we need to drink water to stay healthy and alive, and fish need water as a home.

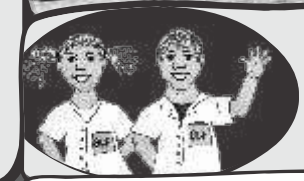


FOOD

All living things need energy to be able to function properly. Energy is needed to grow, move and reproduce. Food gives us energy.

Think about what would happen if you did not eat for three days…





INVESTIGATE

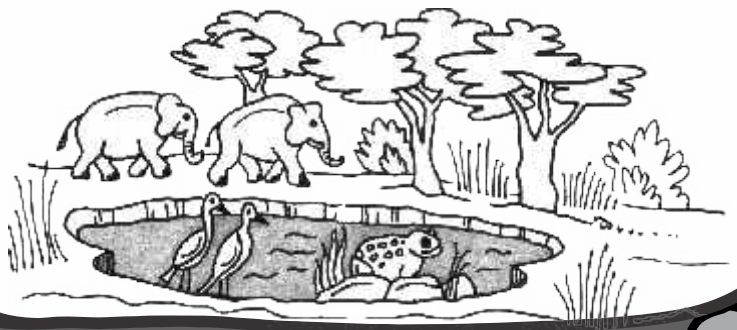
Be an artist!

- Look around you. Investigate, plan and draw your environment in your notebook.
- You could also give your drawing a heading, for example, My Environment.

Remember, an environment includes living and non-living things, and depending on the kind of environment, it can also include man-made things.

HOME

All living things need a home, a place where they have shelter and safety.



WATER

ALL LIVING THINGS NEED WATER TO SURVIVE



Many giraffe in different parts of Africa are able to live in a hot and dry environment. If giraffe get enough water from the food they eat, they can survive without drinking every day. People are not like giraffe, we can survive several weeks without food, but only a few days without water. We need to drink six to eight glasses of water every day to stay healthy!



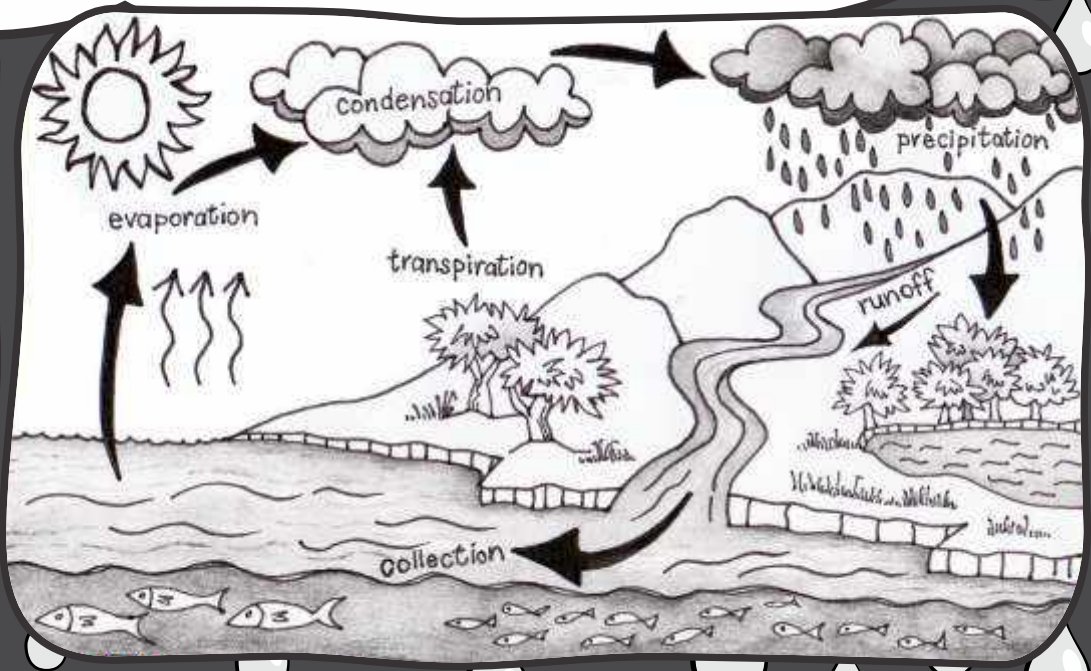
WHERE DOES WATER COME FROM?

Like you, water is always moving and changing, and it never goes away. The water cycle is the constant round and round movement of water between Earth and the atmosphere.

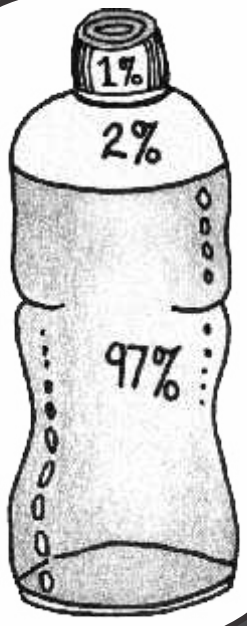
When the sun heats up water in the oceans, rivers and dams, the water changes from a liquid into an invisible gas called water vapour, which rises into the atmosphere. This process is called evaporation. Water is also released from plants. When plants soak up water with their roots, they let some of this water escape as water vapour through small openings in their leaves. This process helps them to keep cool, and it is called transpiration.

In the atmosphere, the water vapour cools down and changes into water droplets that form clouds. This process is called condensation. When the droplets are heavy enough, they fall back to Earth as rain. This process is called precipitation. When it rains, the rainwater flows as runoff over the land and collects (collection) in rivers, dams, the oceans, and the ground for plants. Then, the whole cycle begins again.

THE WATER CYCLE



WATER ON EARTH



1% of the water on the planet is available for us to use, and we have to share it with all the other living creatures. Do you think this is enough water for all of us?

2% of the water on the planet is in the polar icecaps, where penguins (South Pole) and polar bears (North Pole) live.

97% of the water on the planet is in the oceans. Can we drink this water? No, sea water is salty!



DID YOU KNOW?

All the water on Earth has remained the same for about 4 billion years.

Wow, imagine, you are most probably drinking the same water that dinosaurs drank!



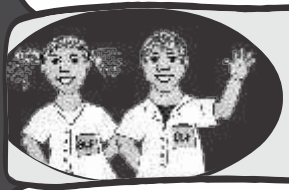
WHY IS RAIN IMPORTANT?

Rain is an important part of the water cycle. Unlike the salty water in the ocean, rain is fresh water.

Rain supports all life on land with salt-free water.
It provides water for plants to grow and animals to drink.
It fills rivers, dams and lakes, where many plants and animals live, and it also fills underground water systems.

When there is too little rain, it could cause drought conditions.
When there is too much rain, it could cause floods.

RAIN IN YOUR COUNTRY



INVESTIGATE

Some countries get more rain than others. Also, the rain inside one country does not always fall evenly. Think about your country. Find out whether some areas get less rain than others.

- Which area gets the most rain in your country?
- Which area gets the least rain in your country?





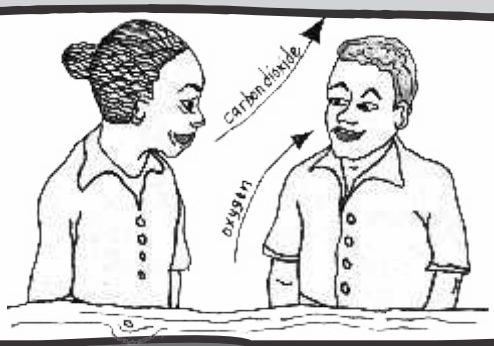
SAVE WATER

Turn off your taps properly and report burst pipes.

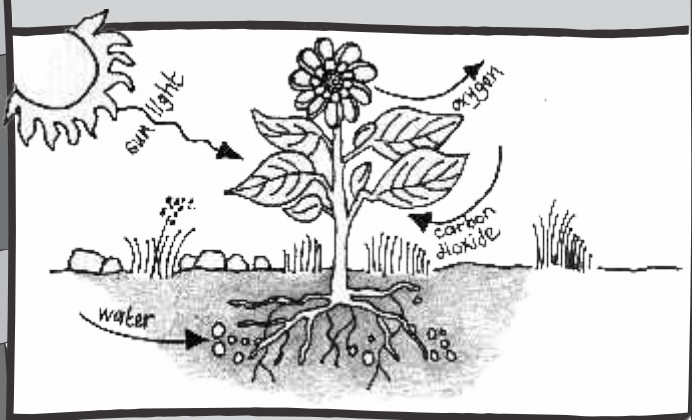
HOW DO TREES AND PLANTS HELP US TO BREATHE?

To be able to live and grow, trees and plants need soil, sun, clean water and clean air. Trees and plants are important because they provide shade and food, as well as homes for many kinds of birds, insects and small animals.

They also help us to breathe.
How does this work?
In order to survive, animals and humans breathe in air, which contains oxygen. During respiration (see page 6, Living Things), energy and a gas called carbon dioxide is produced. When we breathe out, this carbon dioxide is released into the air.



Animals and humans cannot use carbon dioxide, but trees and plants can. During a process called photosynthesis, plants use sunlight, water and carbon dioxide to make their own food and oxygen.



So, in a way, it is a cycle. Plants help animals and humans breathe by providing oxygen, and animals and humans help plants 'breathe' by providing them with carbon dioxide.

ACTIVITY GROW MORE OXYGEN



Be a provider! Even the smallest plant helps to provide more oxygen in the world. We would like you to grow a plant. It could be a vegetable like a tomato or something pretty like a sunflower plant.

- Find a pot or a container, some good soil, a container for water, and a healthy-looking seed.
- Fill your container with soil. Make sure that the soil is damp. Make a shallow hole in the centre of the container. Carefully place the seed in the hole and cover it up with loose soil. Keep the soil moist so that your plant can begin to grow.
- Once your plant begins to grow, do not forget to give it water and make sure it gets enough sun during the day.

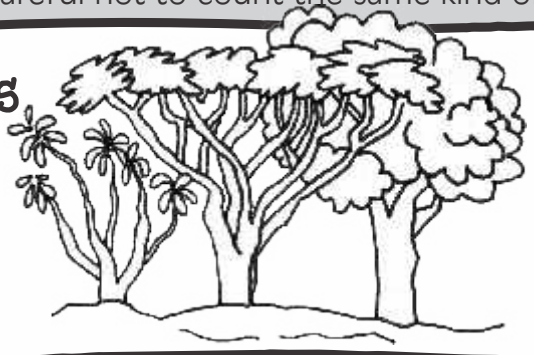


INVESTIGATE

Be observant!

- Look carefully at the plants and trees in your environment.
- Count how many different kinds of trees there are, and how many different kinds of plants there are.
  (Be careful not to count the same kind of tree or plant more than once.)

Trees _____



Plants _____



INDIGENOUS AND ALIEN TREES AND PLANTS

There could be trees and plants growing in your country that do not belong there. If there are, these plants are called alien plants because they have been introduced from other countries and continents. Plants that belong naturally in your country are called indigenous plants. So, if you would like to plant one or several trees at home or at school, be sure to choose indigenous trees that belong in your country.

Alien trees and plants spread out in the natural environment where they steal growing space, water, nutrients in the soil and sunlight from the indigenous plants. This makes it difficult for indigenous plants to grow in a healthy way.



This plant is the Prickly Pear, which is indigenous to North and South America. It was introduced to Southern Africa, where it has become a serious problem because it spreads very fast and steals growing space from indigenous plants.

ENDEMIC PLANTS

Plants that are found only in one particular area and nowhere else in the world are called endemic plants. A very good example of an endemic plant is the Welwitschia, which grows only in the Namib Desert in Namibia.



NUTRITION

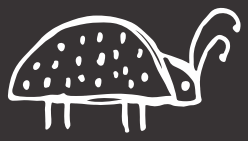
NUTRITION IS THE FOOD WE EAT.

People are omnivores. This means that we eat fruit, vegetables and meat. Not everything we eat is good for us. We cannot live only on lollipops, biscuits, cake and soda cooldrink.

Eating the right food is very important because it keeps us healthy and gives us energy. Food gives us energy to do all the things that living things do – to grow, to reproduce, to move, and to learn.

WHAT ARE NUTRIENTS?

Nutrients are all the important things (like vitamins and minerals) found in healthy foods that keep you alive, healthy and strong. Water is also an important nutrient. More than half (70%) of your body is made up of water. Without water, your body is not able to use all the other nutrients, and you would die in a short time! Your body uses the food you eat as fuel to keep you going, just like a car uses fuel to keep running. But just like a car, you need to make sure you put the right fuel in.



ACTIVITY 1

Below, there are good and bad foods floating around together.

- We would like you to cook a healthy lunchtime pot stew.
- Draw arrows from all the foods you are going use to the pot.

ACTIVITY 2

DESSERT TIME!

- Look at the picture again.
- Draw a circle around all the healthy foods you can use to make a dessert.
- Pick your foods carefully – choose only those foods that are full of nutrients.



FOOD CHAINS

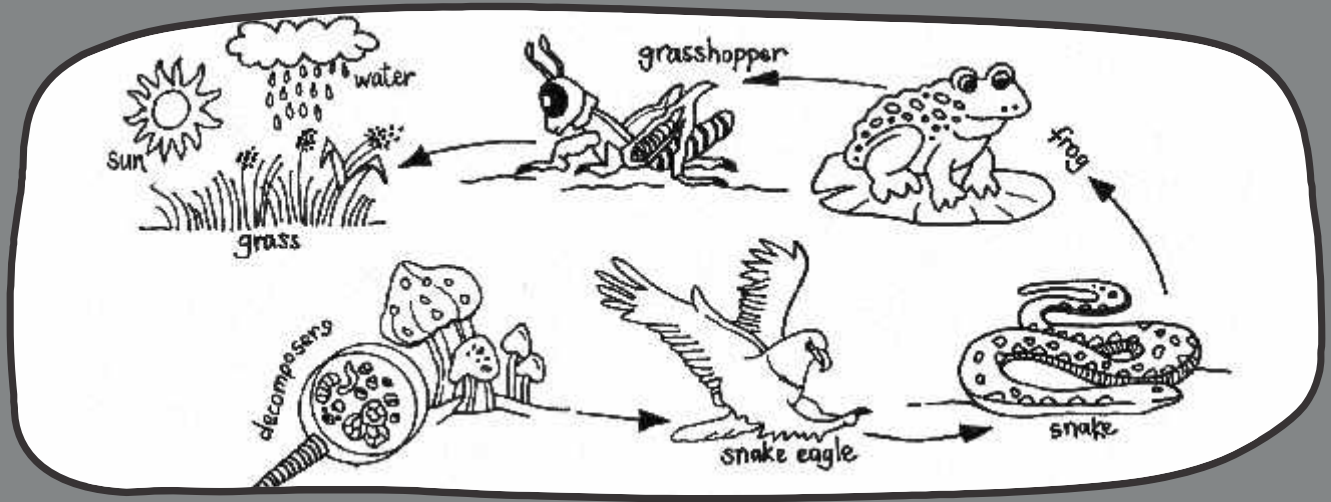
Where do you get your energy from?

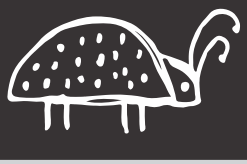
We get it from food. In nature it works the same way.

A food chain shows us how one living thing becomes food for another. Each living thing eats or decomposes the one that comes before it. This keeps energy flowing in nature.

Food chains always begin with plants.

Plants make their own food and they are called producers. Living things that eat other living things are called consumers.
Decomposers are the final stage in a food chain. Decomposers are bacteria, fungi and other small organisms that break down the tissues of dead animals and plants. This adds nutrients to the soil so that new plants can grow. Then the food chain starts again.

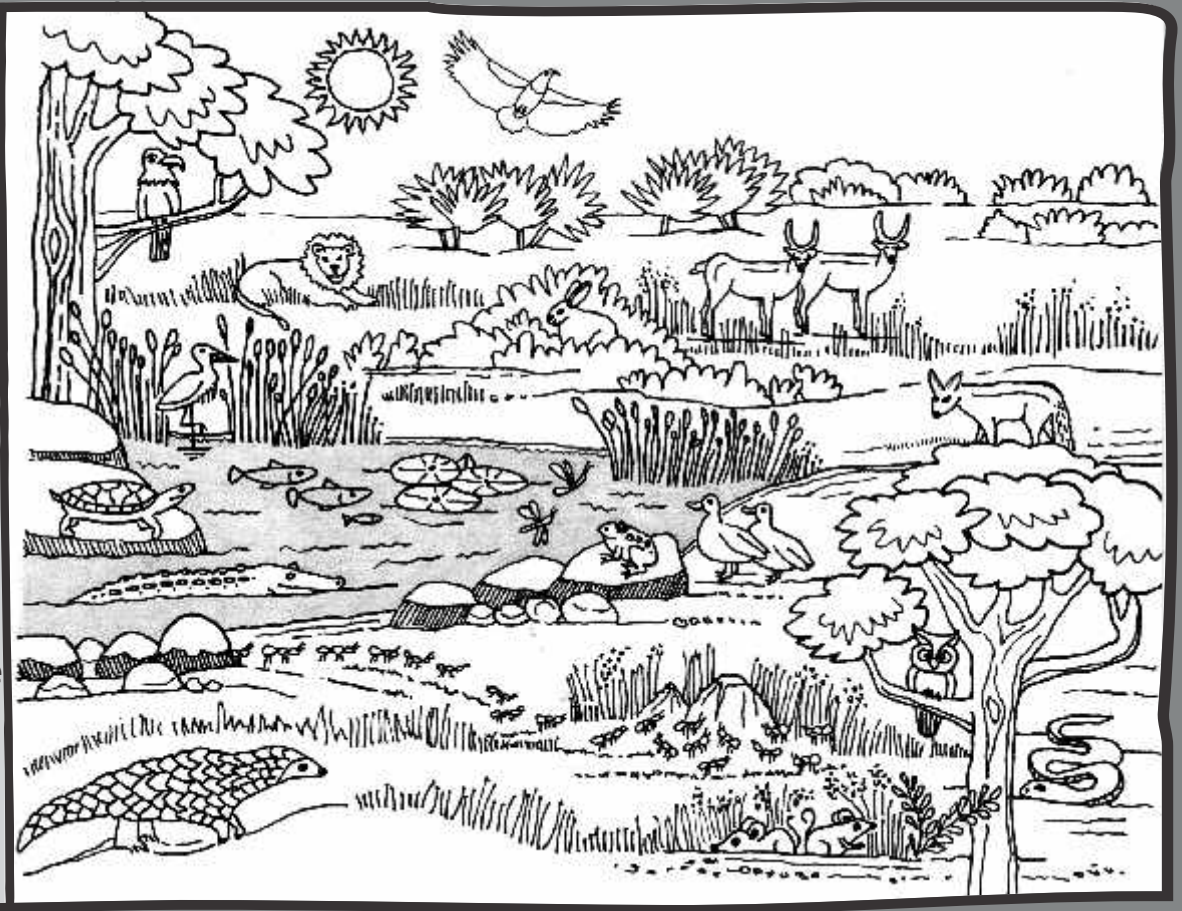




ACTIVITY

Be a builder!

- Study this environment.
- Look at who eats who or what. In your notebook, write down all the simple food chains you can find.



ECOSYSTEMS

What is an ecosystem?

What comes to your mind when you hear the word ecosystem?
Think of a community…

An ecosystem is a group (a community) of living and non-living things that interact with each other together in a particular area.

There are many different types of ecosystems, and they have no specific size.
Ecosystems can be large, but they can also be very small.

Large ecosystems are areas like a savanna (grassland), a desert, a forest, and the ocean.

Small ecosystems are areas like a pond, an individual tree, or a branch that has fallen on the ground.

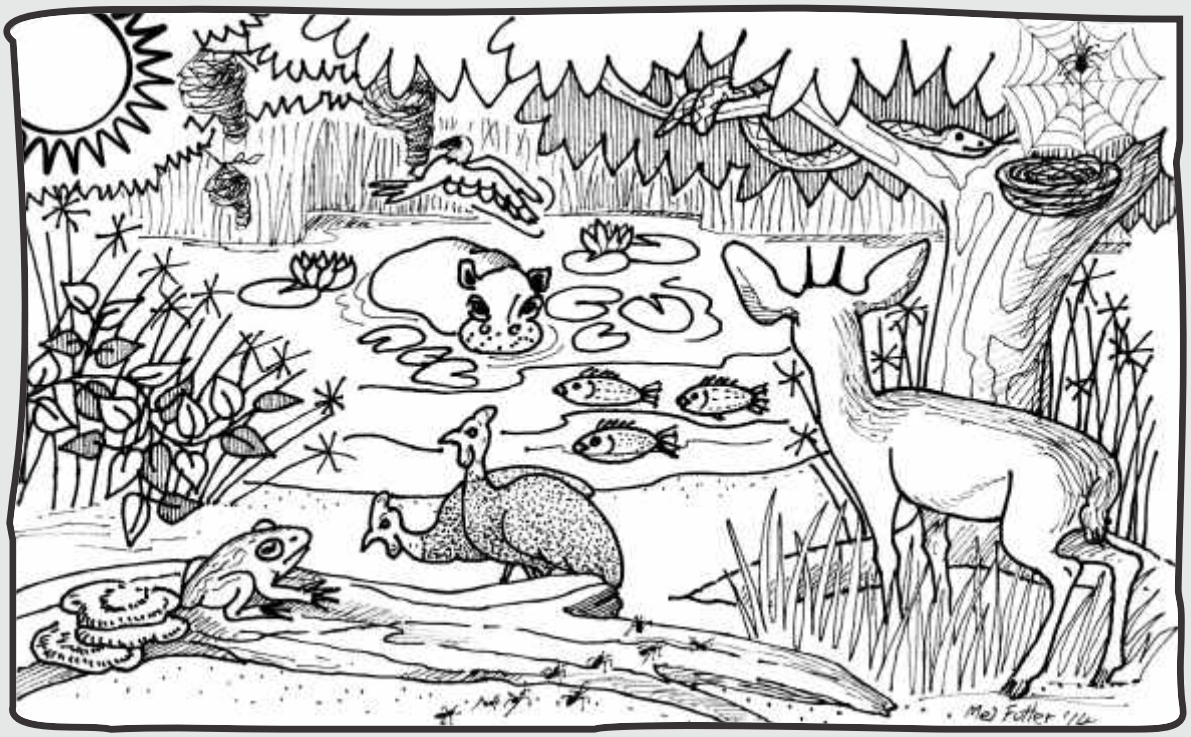
The most important parts of an ecosystem are air (atmosphere), water, sunlight, soil, plants and animals.
They all work together, help each other, and depend on each other for survival. Everything in an ecosystem is balanced and connected.



HOW DO LIVING AND NON-LIVING THINGS INTERACT WITH EACH OTHER?

The **atmosphere** provides oxygen and carbon dioxide for all life on Earth.
Water keeps animals alive, it allows plants to grow, and provides a home for plants and animals.

Plants provide homes and food, and the **animals** form healthy food chains.

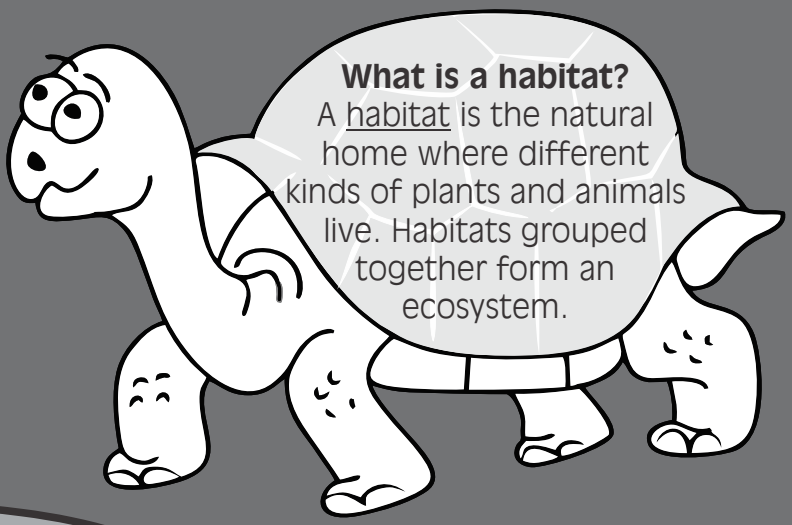


Sunlight allows plants to grow and make their own food, it keeps plants and animals warm, and it helps with the water cycle.

Soil provides nutrients for plants to grow, it holds water for plants to use, and it provides homes for animals that live under the ground.

WHY ARE ECOSYSTEMS IMPORTANT?

Ecosystems play an important role in an environment because they provide habitats, food, and the five basic needs that all living things need to survive.



ADAPTATION IN A HABITAT

Over long periods of time animals adapt to fit their habitat. This means that they have developed certain things that help them to survive where they live.
Animals adapt so that they can stay safe, travel well, and find food in their habitat.



- Hippopotami do not have much hair on their bodies, so they stay in the water during the day and come out at night to eat.
- During the cold winter months, animals grow thick coats of fur to keep them warm (like horses and donkeys).
- Many animals that live in the snow have white fur so that their enemies cannot see them (like rabbits and foxes).
- Tortoises have hard shells to keep in moisture and protect them from enemies.
- Dolphins have long, sleek bodies so that they can swim fast.
- Giraffe have long necks so that they can reach the leaves at the tops of trees.
- Many desert plants have very hairy small leaves to protect them from losing too much moisture.



INVESTIGATE

BE A RESEARCHER!

- Find out how other animals and plants have adapted to where they live.
- Find out more ways that desert plants have adapted to their habitat.

(Ask your parents, teachers and friends, and record what you find in your notebook.)

BE AN EXPLORER!

- Visit a garden, a park, or any outside area.
- Look around carefully for a small ecosystem.
- When you find one, spend time watching the different living things. Notice what they are and what they do.
- Describe this small ecosystem that you have found in your notebook, and then draw it (remember to record the non-living things).

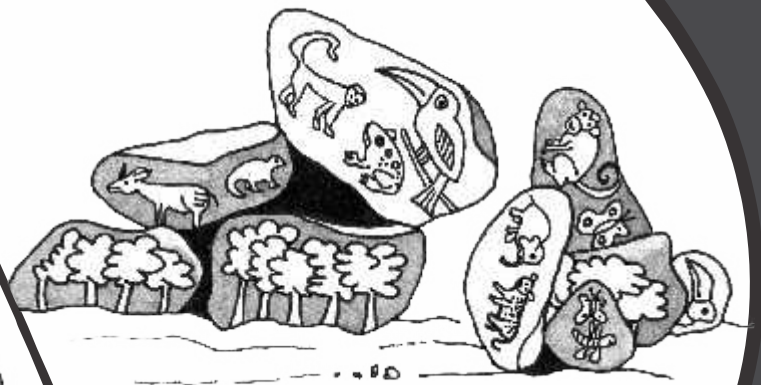
If you look closely, it is amazing what you can find!

What happens when the balance in an ecosystem is unbalanced?

Humans participate in many activities that harm ecosystems in the environment.
When humans disturb, remove, or poison and pollute one part of an ecosystem, it will unbalance the balance of another part of the ecosystem, and sometimes even the whole ecosystem.

A simple example is a vegetable garden.
If you do not water the vegetable garden, all the plants will eventually die.
Some of the insects will also die, and the other insects and birds will have to move somewhere else.





Notice what happens in the rainforest

What happens to the rocks that are the animals, birds and insects when a part of the rainforest is removed? They fall to the ground, because they are no longer able to balance. This means that many of the animals, birds and insects die, and others are forced to move away to find new homes.

We need to look after our natural world because, remember, there is nowhere else for us to live.



INVESTIGATE

Be an ecosystem investigator!

⇨ What human activities are harmful in an ecosystem, and how do they affect other parts of the ecosystem?

(Ask your parents, teachers and friends, and record what you find in your notebook.)

WORLD POPULATION and GROWTH

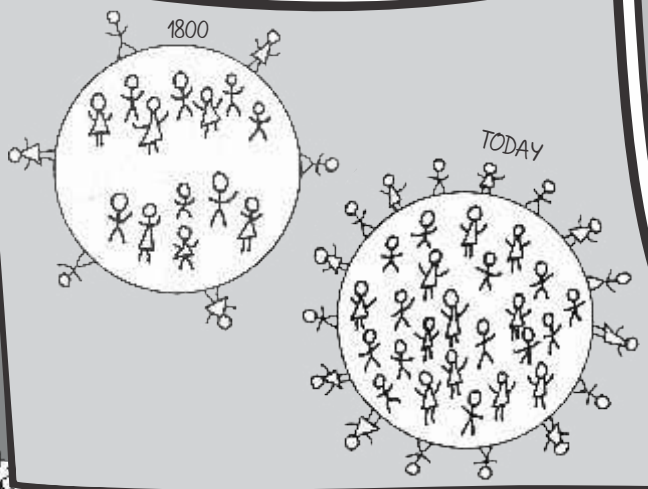
The world population is the total number of humans living on Earth.

Population growth is the increase in the number of humans in the world.



How many people are there in the world?

Today, there are 8.2 billion people in the world.
It took over 2 million years for the world's population to reach 1 billion people by the year 1800.
But, it took only 225 years for it to reach 8.2 billion by the year 2026.
Wow, that was fast!



Imagine this:

If all 8.2 billion people on Earth joined hands to form a human chain, it would be about 7 million kilometres long. This means that the human chain would stretch to the moon and back 9 times!



DID YOU KNOW?

The human population is growing fast.

At the moment:

- About 260 babies are born every minute.
- About 385 000 babies are born every day.
- About 140 million babies are added to the population every year.

Have you ever wondered whether there are too many people in the world?

What caused this fast population growth?

Before the year 1800, people did not know much about medicine and growing their own food. When we discovered more about medicine and growing food, we started to live longer because we now have more food and better health care.

Because people live longer, the number of children being born is more than the number of people who die.

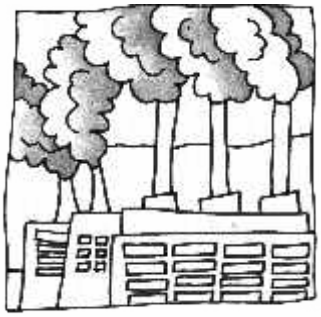
WASTE

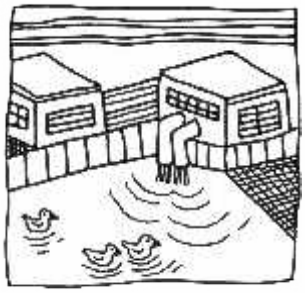
WHAT IS WASTE?

Waste is all the unwanted things that we no longer need. They are thrown away or removed from where they are.

We throw away things like containers (these can be plastic, glass, aluminium or metal), cooldrink cans, plastic bags, cardboard packaging, paper and plastic wrapping, batteries, things that are broken (like furniture and electrical equipment), food waste from the kitchen, and this list really does go on and on…

Factories and warehouses also produce waste, which is called industrial waste. They remove waste like metals, used oil and chemicals, and smoke.
Many factories pollute oceans, rivers, dams, and the air by pumping their waste into them.







DID YOU KNOW?

All of our man-made waste takes a very long time to break down and disappear.

- cooldrink can ⇒ 140 years
- cotton t-shirt ⇒ 2-5 months
- plastic bag ⇒ 10-20 years
- nylon string ⇒ 30-40 years
- foam cup ⇒ 50 years
- glass bottle ⇒ 1 million years
- throw-away nappy ⇒ 450 years
- small battery ⇒ 120 years

WHY IS WASTE A BIG ISSUE?

As the human population grows, so does the amount of waste that we create every day.

More and more people = More and more waste

Did you know that a lot of our waste gets dumped and buried in landfills all around the world?

If landfills are not properly organised and looked after, they can be very dangerous and harmful.

For example:
Electronic equipment like computers, televisions, mobile phones, batteries and fluorescent light bulbs are poisonous.

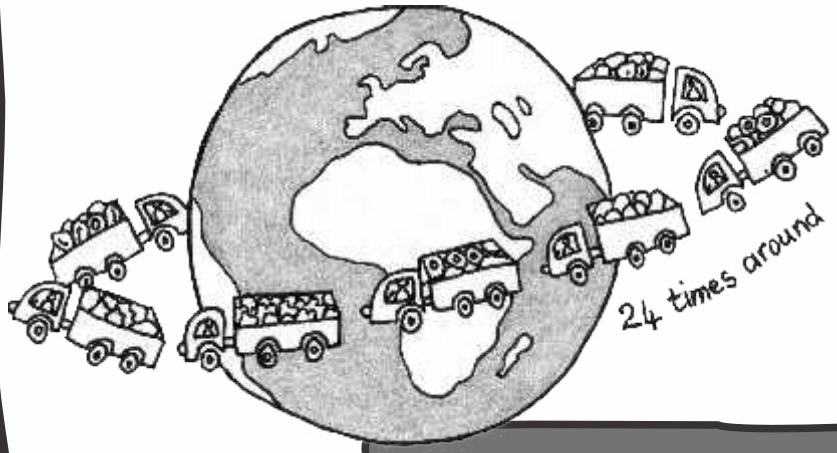
- They need to be separated and handled in the proper way.
- If they are just thrown into landfills, they release poisonous substances like lead, acids and mercury.
- These poisonous substances then leak into the soil and water around the landfills, which is very dangerous for the health of people, plants and animals.



WHAT IS A LANDFILL?

A landfill is a large deep hole where waste is dumped and buried. Some landfills are properly managed, where harmful waste is separated.

HOW MUCH WASTE DO WE CREATE?



Remember, there are 8.2 billion people in the world today.

Every year, we create 2.12 billion tons of waste.

If all this waste was loaded into trucks, the trucks would form a chain that goes around the world 24 times.

WE ALSO CREATE WASTE BY LITTERING

What is littering?

Littering is when we throw our waste in the environment and do not dispose of it properly.

For example, littering is when someone throws an empty cooldrink can and chip packet out of the car window while travelling, or throwing a sweet wrapper on the ground while walking.



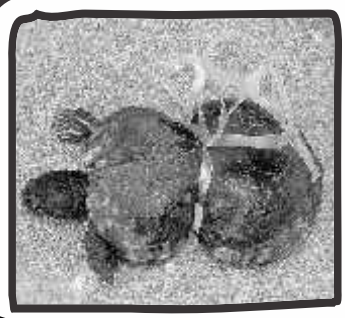
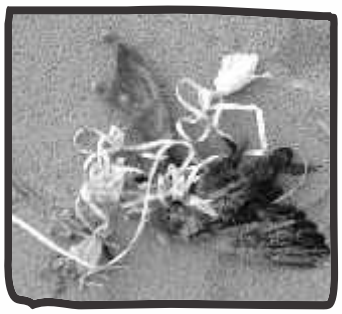
Litter is dangerous to life.

Litter can harm people.
For example, you could cut your foot on an old rusty soda can or broken glass while playing barefoot outside.

Our litter harms or kills animals.
Every year, more than 1 million land animals, insects and birds, and water creatures such as dolphins, whales, fish and turtles die because of litter.

For example:

- They can choke or get very sick when they accidentally eat plastic things.
- They can get stuck inside plastic bags and suffocate.
- They can get tangled in fishing line, string, plastic wrapping and wire.
- They can get their heads or entire bodies stuck in containers.
- They can cut themselves on cans and broken glass.



HOW TO DEAL WITH WASTE

With so many people living in the world today, dealing with waste has become an even more difficult job for all cities, towns and communities.
To keep people and animals safe, all waste needs to be managed properly.

The big question is:

WHAT CAN YOU DO TO CREATE LESS WASTE?

You can follow the **4 Rs**: Refuse Reduce Reuse Recycle

Refuse

means that if something is not necessary, you simply do not do it.

For example:

- Say NO to plastic bags when you go shopping – take your own bags or a basket.
- Say NO to straws. Would you enjoy your cooldrink just as much if you did not use a plastic straw?
- Say NO to littering.

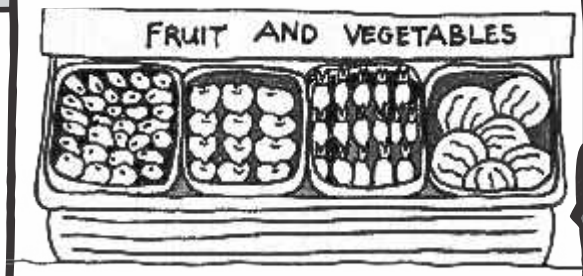


Reduce

means to lessen or lower the amount of waste you produce.

For example:

- Buy bigger packages rather than lots of small ones. So, instead of buying a small bottle of cooldrink for each person, rather buy a large bottle of cooldrink that everyone can share.
- If you can buy loose fruit and vegetables, do this instead of buying those that are already packed in plastic bags.



Reuse

means to use something more than just once.

For example:

- Instead of just throwing away a juice bottle after drinking all the juice, you can reuse it as a water bottle.
- If you would like to use a straw to drink your cooldrink, think about keeping your own straw and reusing it (this could be a metal straw).
- You can use empty containers to grow food plants like spinach.

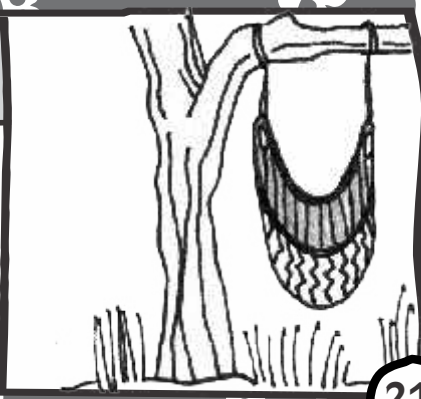


Recycle

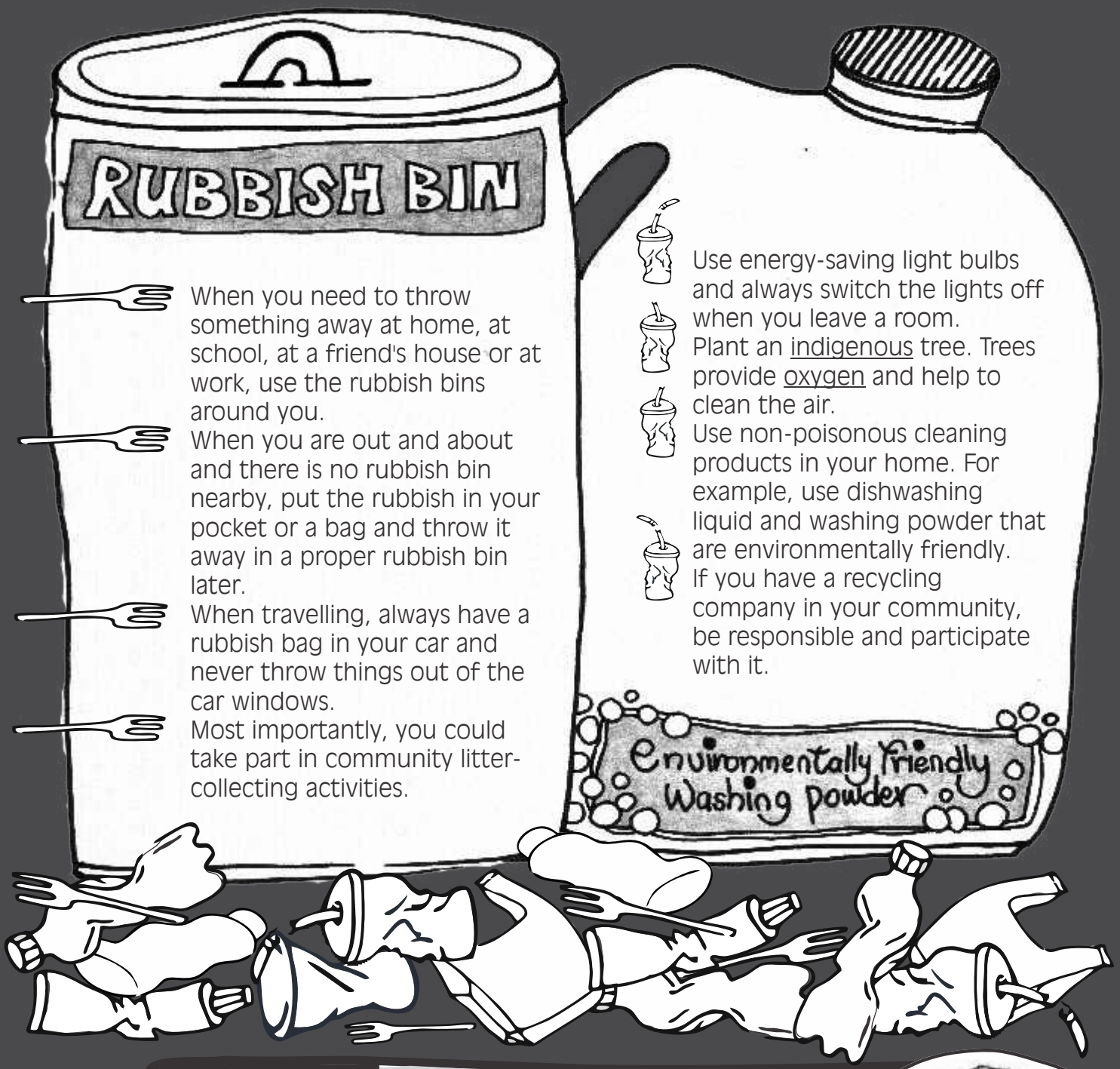
means to change something into something else that can be used again. In some towns and cities, waste material is collected for commercial recycling.

For example:

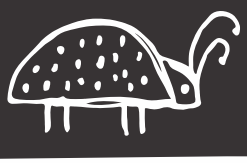
- You can make a swing out of an old car tyre.
- You can turn empty tea-bags into fire-balls to light a fire.
- You can use bottles and bottle tops to make musical instruments.



Now that we have explored the 4 Rs to help you create less waste in your everyday life, here are a few extra actions and ideas to help keep your environment safe and healthy.



- When you need to throw something away at home, at school, at a friend's house or at work, use the rubbish bins around you.
- When you are out and about and there is no rubbish bin nearby, put the rubbish in your pocket or a bag and throw it away in a proper rubbish bin later.
- When travelling, always have a rubbish bag in your car and never throw things out of the car windows.
- Most importantly, you could take part in community litter-collecting activities.
- Use energy-saving light bulbs and always switch the lights off when you leave a room.
- Plant an indigenous tree. Trees provide oxygen and help to clean the air.
- Use non-poisonous cleaning products in your home. For example, use dishwashing liquid and washing powder that are environmentally friendly.
- If you have a recycling company in your community, be responsible and participate with it.



ACTIVITY



Be an activist!

- Share and spread the news about waste and litter with your family and friends.
- Find out about whether there are any litter-collecting activities in your community. If there are, you could take part. If there are not, you could suggest to have one.



REMEMBER, EVERY ACTION COUNTS BECAUSE OUR WORLD COUNTS!

OCEANS

WHAT IS THE OCEAN?

The ocean is a huge body of salt water that covers about 71% of Earth's surface. The seven continents divide the ocean up into five different oceans, but it is still one connected ocean.

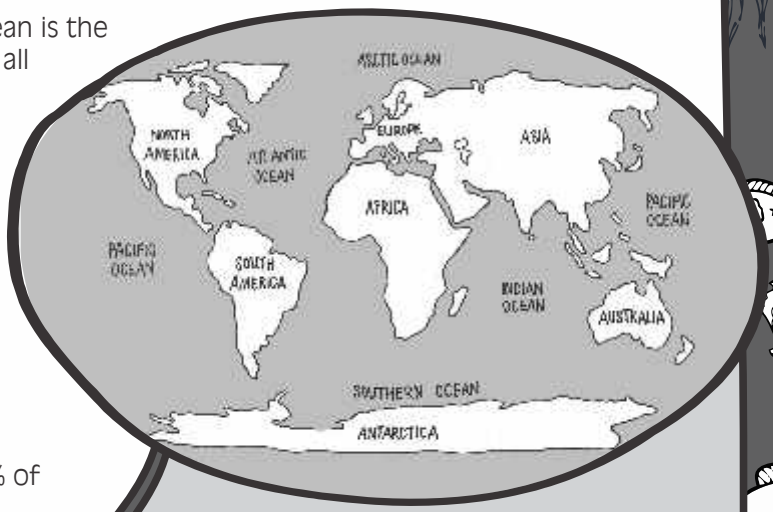
The Pacific Ocean is the largest and deepest of all the oceans, and it covers more than 30% of Earth's surface.

The Atlantic Ocean is the second largest ocean, and it covers about 20% of Earth's surface.

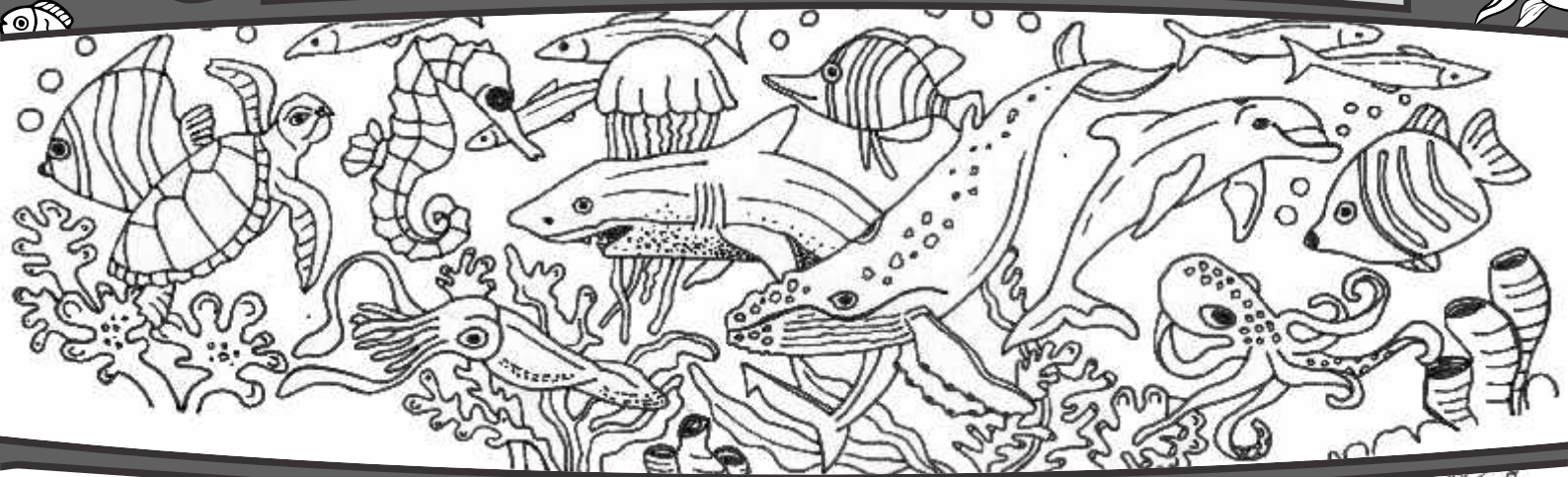
The Indian Ocean is the third largest ocean, and it covers about 14% of Earth's surface.

The Southern Ocean is the second smallest ocean, and it covers about 4% of Earth's surface.

The Arctic Ocean is the smallest and shallowest ocean, and it covers about 3% of Earth's surface. This ocean is at the North Pole where there is no land, only floating ice.



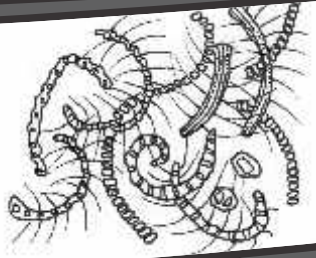
The ocean is the largest habitat on Earth, and it is home to nearly 95% of all life on Earth. Each ocean supports lots of different animals and plants. Apart from lots of different fish, seaweed and other sea plants, there are also many different whales, dolphins, sharks, turtles, stingrays, seals, sea lions, starfish, squids, jellyfish, octopuses, penguins and many more. The polar bears live on the ice in the Arctic Ocean.



Very important plants also live in the ocean; they are called phytoplankton. Phytoplankton float freely in the water, often near the surface to get sunlight. They are really tiny and we cannot see them with the naked eye. Like plants on land, they use carbon dioxide and release oxygen.

Why are phytoplankton important?

Phytoplankton are important because they are food for many different sea animals, including whales.



The ocean is the heart of the planet

WHY IS THE OCEAN IMPORTANT?

- Phytoplankton produces up to 50% of the world's oxygen.
- The ocean is home to nearly 95% of life on Earth.
- The ocean absorbs heat from the sun and it absorbs carbon dioxide. This keeps the climate on Earth in balance.
- The ocean is a source of food (fish, seafood and sea plants), job opportunities and relaxation for people.

HOW DO OUR ACTIVITIES HARM THE OCEAN?

- Many ocean habitats have been harmed in some way or destroyed because of drilling and deep-sea mining.
- Many dangerous waste chemicals from industries on land are pumped straight into the ocean and into rivers and dams, which find their way into the ocean. This is called pollution. The ocean animals are either killed immediately because they take the chemicals into their bodies, or they are harmed in such a way that they cannot function properly anymore.
- Oil spills from ships still happen all over the world. The oil covers the surface of the ocean, where it harms sea birds, and then it sinks down and kills ocean plant life and a wide variety of fish and other sea animals.
- Global warming is raising ocean temperatures, and increasing the water level because the ice at the South and North Poles is melting.
- Large-scale overfishing has almost destroyed certain local fish stocks, which leaves too few adult fish to breed for the future.
- Litter in the ocean causes a lot of damage, especially plastic. A lot of this litter is carried to the ocean from land by wind and rivers. Some countries also deliberately dump huge amounts of their waste into the ocean. In the sea, plastic takes a very long time to break down. Sea animals get tangled up in the plastic and strangled to death, or they eat it and choke to death.



DID YOU KNOW?

- 80% of all waste and pollution in the ocean comes from land activities.
- 8 million metric tons of plastics are dumped into the ocean every year.
- Plastic waste kills up to 1 million sea birds, 100 000 sea animals and countless fish each year.

WHAT CAN WE DO TO HELP LOOK AFTER OUR OCEANS?

- Stop using plastic things such as single-use bags, straws, cutlery, cups, water bottles and balloons.
- Can you think of any other plastic things to add to this list?
- Help to clean up. Get involved in or organise clean-up activities in your community.



DID YOU KNOW?

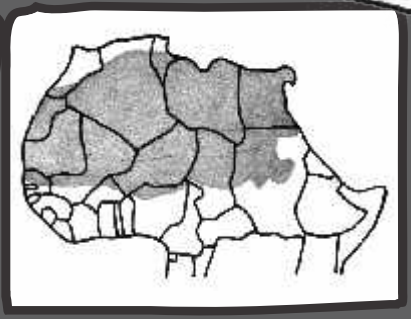
The longest mountain range in the world is in the ocean. It is called the Mid-Oceanic Ridge. It runs through the middle of the Atlantic Ocean, and then into the Indian and Pacific Oceans.

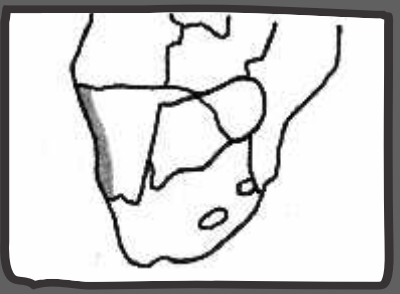
DESERTS IN AFRICA

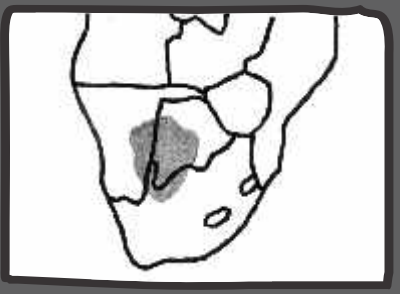
WHAT IS A DESERT?

A desert is a place where very little rain falls. They are the driest places on Earth. Deserts are made up of hilly and flat areas of rocks and gravel, as well as sand dunes. Some deserts have larger areas of sand dunes than others.

Sahara Desert	This is the largest desert in Africa. This desert is in the northern part of Africa, and it exists in 11 different countries: Egypt, Algeria, Chad, Libya, Mali, Mauritania, Morocco, Niger, Sudan, Western Sahara and Tunisia.
Namib Desert	This desert is in Namibia. It is the oldest desert in the world, and it is the second largest desert in Africa.
Kalahari Desert	This desert lies in the heart of Southern Africa. It exists in three countries: Namibia, Botswana and South Africa.







ADAPTATION IN A DESERT

Desert environments have very little rainfall, water and plants, and they have very hot and cold temperatures. Many different animals and plants have had to adapt to be able to live in desert environments. This means that they have developed certain things that help them to survive.

Many desert plants have long tap roots that help them to get water from deep, deep down under the ground. The Welwitschia in the Namib Desert has roots that can grow to 30 metres deep.

Cactus plants have fat stems that store water. Instead of leaves they have thorns (too much moisture gets lost through leaves).

Animals hide in shady places or dig themselves into the sand during the heat of the day, and they only come out at night when it is cooler.

The camel can drink up to 45 litres of water at once, and then go for a week or more before drinking again.

ACTIVITY

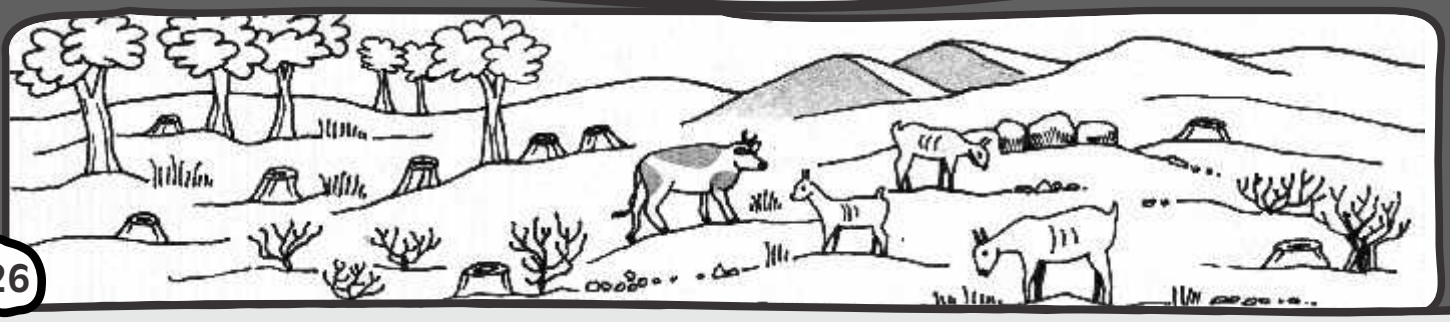
➡ Draw a line from each animal to its correct adaptation for survival in a desert.

Desert Mice 	**A** Instead of leaves, they have thorns. When it rains, they store water in their fleshy stems.
Chameleons 	**B** They build large communities of joined nests. These villages of nests stay cool in the day and warm at night.
Sociable Weaver Birds 	**C** In the early morning, they crawl up the dunes. They do a headstand, raise their bottoms upwards, and wait for the morning fog. When the fog arrives, it collects on their bodies and rolls down to their mouths so they can drink.
Sidewinding Snakes 	**D** They live in burrows under the ground, and only come out at night when it is cooler to feed on plants.
Fogbeetles 	**E** To keep cool during the heat of the day, they change their skin colour to a lighter colour to reflect more sunlight.
Desert Cactus 	**F** So that only small parts of their bodies touch the hot desert sand while moving during the day, they bounce themselves sideways and very fast.



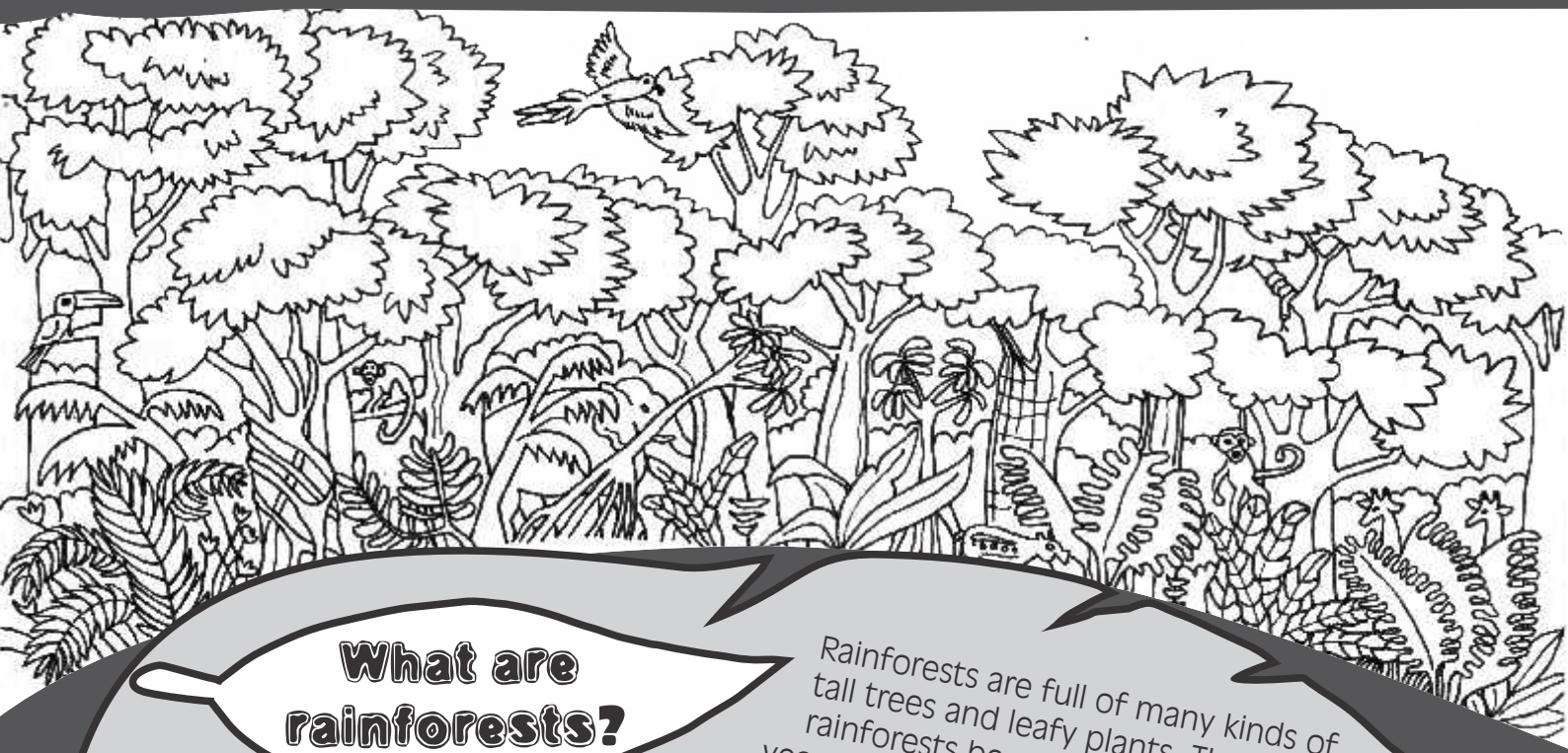
DID YOU KNOW?

- Not all deserts in Africa are natural.
- Some deserts are man-made. They have been created by people.
- When too many trees are chopped down in already dry areas for cooking fires, building material and to make space for growing crops, the soil is blown away by the wind and washed away when it rains. Chopping down too many trees is called deforestation.
- When too many sheep, cattle and goats eat the grass and plants in an area that does not have enough, the grass and plants cannot grow faster than they are eaten. This is called overgrazing.
- Deforestation and overgrazing lead to desertification (man-made deserts).
- Desertification is one of Africa's biggest problems.
- When there are too many people living in dry areas, it can cause man-made deserts.



Answers: Desert Mice (d), Chameleons (e), Sociable Weaver Birds (b), Sidewinding Snake (f), Fog Beetles (c), Desert Cactus (a)

RAINFORESTS

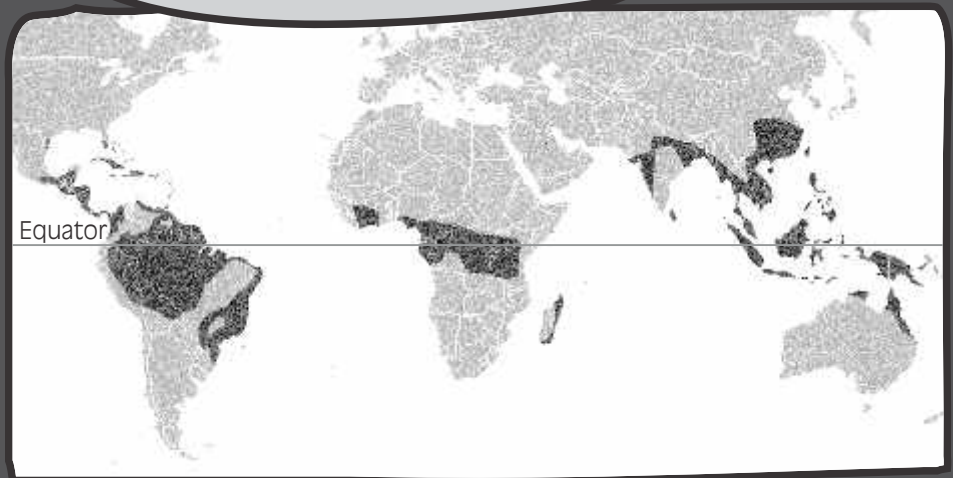


What are rainforests?

Rainforests are full of many kinds of tall trees and leafy plants. They are called rainforests because they get a lot of rain every year, which helps the plants to grow very fast. Because rainforests are warm, very wet and so full of trees and plants, they are also full of life. Millions of different fascinating, beautiful and interesting animals live in them.

About 80% of life in rainforests can be found in the canopy. The canopy is where the branches and leaves of the highest trees join together to form a kind of umbrella. Animals move around the canopy by flying, jumping or swinging. Bigger animals like the jaguar (a cat) and forest elephant live on the ground under the canopy.

Most rainforests are found near or along the equator (where it is warm) in South America, Central America, Africa, Asia and Australia.



Are rainforests in trouble?

Yes, rainforests are in trouble.
Rainforests in many parts of the world are being destroyed because of mining and the building of roads.
Their trees are being chopped down for building and furniture, to make space for people to live, and to make space for cattle and crop farms.

WHY IS IT IMPORTANT TO PROTECT RAINFORESTS?

- Half (50%) of all the land plants and animals in the whole world live in the rainforests.
- About 20% of the medicines we use come from plants in the rainforests.
- They produce 20% of the oxygen that humans and animals need to breathe.
- They help to look after the world's climate by bringing rain.
- They absorb lots of carbon dioxide, which is good because too much carbon dioxide in the atmosphere will make the planet too hot.



DID YOU KNOW?

Rainforest trees are very, very tall. Some of the trees can grow up to 50 metres tall. Because rainforest trees are so tall, they also have enormous roots to support them.

Rainforests are so thick and full of plants and trees, that it can take 10 minutes for a raindrop to travel from the canopy through to the forest floor.



In the Amazon rainforest in South America, there is a wonderful, strange creature called the sloth. Sloths move very, very slowly. They spend most of their time up in the canopy, moving through the trees using large hooked claws to help them along. They eat leaves and fruit. They sleep up to 15 hours at a time. They go down to the forest floor once a week toilet.

Every hour, a piece of rainforest the size of 4 000 soccer fields is destroyed.

If we do not stop destroying the rainforests at the speed it is happening now, they will be completely gone in 100 years.



INVESTIGATE

Be a researcher!

Try to find out more about some of the fantastic animals that live in our world's rainforests.

GLOBAL WARMING

Did you know that our world is getting warmer?

What is global warming?

Global warming is the term used to describe the rising of Earth's overall temperature.
Because of some of the things humans do, Earth is getting warmer and warmer every year.

Remember we looked at how the atmosphere works like a blanket to keep Earth warm? Carbon dioxide, water vapour and other gases are all part of the atmosphere. They are important because they trap heat from the sun before it escapes back into space. This trapped heat helps to keep Earth warm. If this heat is not trapped, Earth would be too cold for us.

Remember we looked at why carbon dioxide is important? Plants use carbon dioxide, sunlight, and water to make their own food and oxygen.

But, too much carbon dioxide in the atmosphere will trap too much heat. Too much heat will raise Earth's temperature.



What causes too much carbon dioxide in the atmosphere?

We need to look at FOSSIL FUELS

Fossil fuels are oil, natural gas and coal.
Oil, natural gas and coal are formed deep under the ground over millions of years. They are made from the remains of plants and animals.
We use oil, natural gas and coal to create electricity to run things like our fridges, lights, televisions and kettles, and to create petrol and diesel to run aeroplanes, cars and trucks.
When we burn these fuels, carbon dioxide is created and it is released into the atmosphere.

Remember, carbon dioxide traps heat in the atmosphere.
So, too much carbon dioxide will raise Earth's temperature.

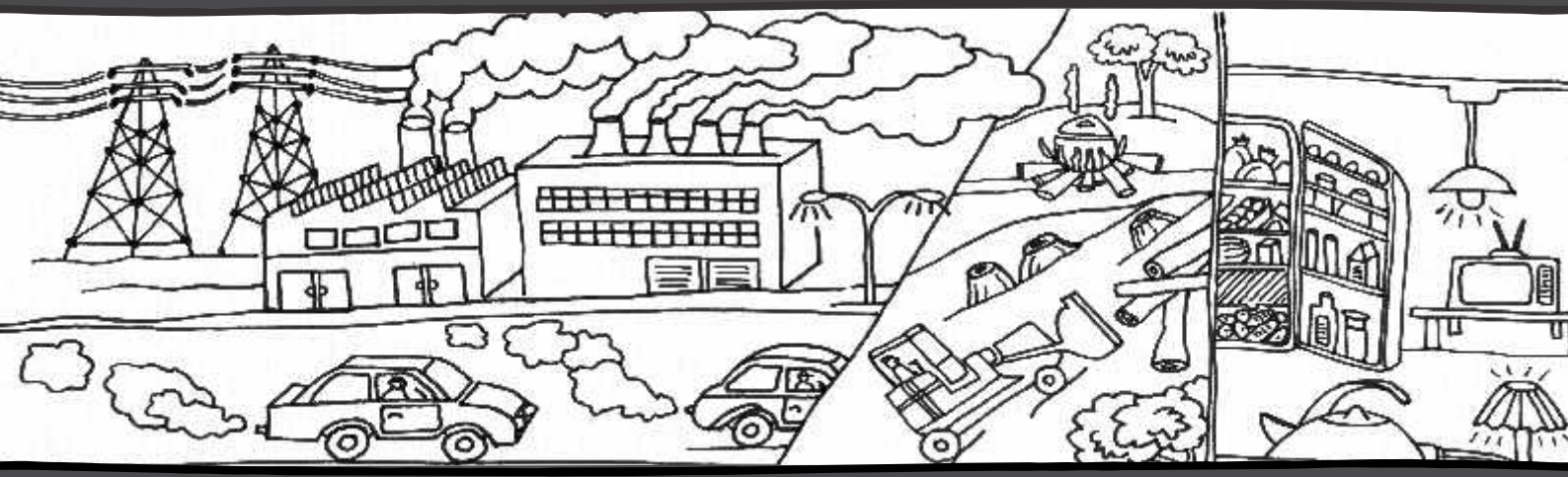
- Because we are 8.2 billion people in the world, we use more electricity, we drive more cars and trucks, and we fly more aeroplanes.
  This means that we need to burn more fossil fuels to make more electricity and diesel and petrol. Burning more fossil fuels means that we are making more carbon dioxide.

- Remember the rainforests? Because the trees and plants remove carbon dioxide from the atmosphere in order to make their own food, they keep the amount of carbon dioxide in the atmosphere in balance.
  If we keep chopping down trees, there will be more carbon dioxide in the atmosphere.

- Too many bush fires, burning too much wood for cooking, and too much factory smoke also create more carbon dioxide.



- Because they take millions of years to form, fossil fuels cannot be replaced fast enough once they have been used.
- Soon, they will run out.
- Fossil fuels cannot be replaced in our lifetime, nor in many, many lifetimes.
- Global warming is a very serious problem in our world today.



WHAT HAPPENS WHEN EARTH'S TEMPERATURE GETS WARMER?

When Earth's temperature changes, even if it is a small amount, it can have a very harmful effect on the environment.

The ice at the North and South Poles will begin to melt (like an ice-cream in the sun).

When this ice melts, the amount of water in the oceans will increase.

Many towns and cities that are near the sea could be damaged or destroyed by floods.

Many animals will move when their homes become too hot.

Some plants and animals might even die.

These changes will also unbalance many food chains.

WHAT CAN WE DO?

The most important thing we need to do is reduce the amount of carbon dioxide that we are releasing into the atmosphere.

We need to:

reduce the amount of open fires and how much wood we burn

reduce the amount of electricity we use (for example: stop leaving lights and televisions on when they are not needed)

use other environmentally friendly supplies of electricity that do not use fossil fuels (for example: solar/sun power and wind power)

use a solar/sun oven on sunny days to cook your lunch and dinner

use wood-friendly cooking stoves that use less wood

stop chopping down trees and forests

grow more trees

ACTIVITY

TEST YOUR KNOWLEDGE (Tick the box for your answers.)

1. **What is global warming?**

a) Ultraviolet rays from the sun ☐
b) The increase in Earth's overall temperature ☐
c) Carbon dioxide ☐

2. **Which of the following are examples of activities that do not burn fossil fuels?**

a) Going to the market in a car ☐
b) Walking to the shop down the road ☐
c) Using a solar/sun oven to cook your lunch ☐
d) Cooking supper on an electrical stove ☐
e) Riding a bicycle to visit your friend ☐

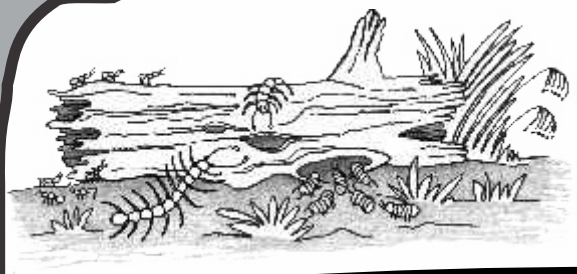
Answers: 1. b) 2. b), c), e)

THE IMPORTANCE OF WILDLIFE

WHAT IS WILDLIFE?

The word wildlife includes all the living things that grow (plants) and live (animals) in a natural environment.
Wildlife in a natural environment can be found in many places around the world. These places can be big, or they can be small.

Wildlife in small places can be found close to where you live, like a park, a garden, a patch of plants or trees growing at the side of a road, or even a pile of wood.



Wildlife in big places grow and live in protected environments such as national parks, game reserves and private game-farms. And in some parts of the world, like in Africa, wild animals also share their living space with people.





IS OUR WILDLIFE THREATENED?

Yes, much of our wildlife all around the world is in trouble. Many different kinds of human activities threaten their safety and their survival.



The main threat to wildlife is the growing human population.
As the human population grows, more land is needed to grow food, to build houses, and for other developments.
Because of this, the space available for wild animals and plants becomes less and less.



In places where wild animals and people share the same space, it can happen that people and wildlife struggle with each other.



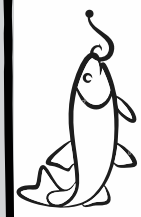
The building of roads and railways and clearing space for crop and animal farming divides habitats up into smaller areas.
Because of this, the wild animals can no longer move freely without danger.

Poaching (illegal hunting) is a real threat to wild animals.





Chopping down forests and trees takes away habitats and oxygen, as well as important indigenous plants.



Pollution and over-fishing of the oceans threatens the survival of many sea animals and plants.

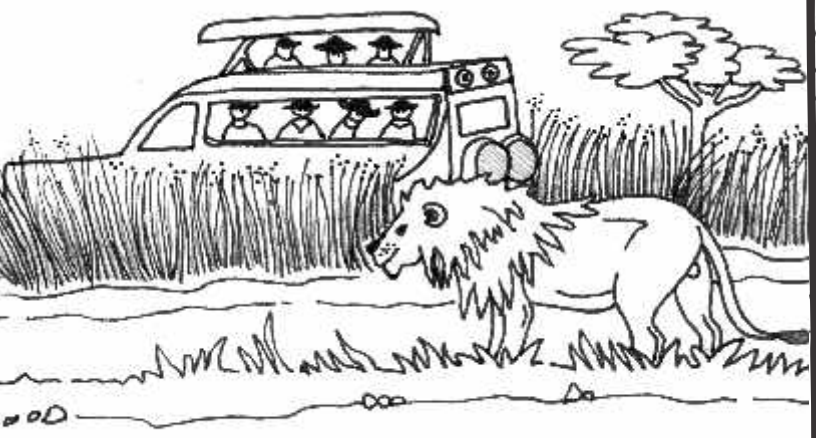
WHY IT IS IMPORTANT TO LOOK AFTER WILDLIFE?

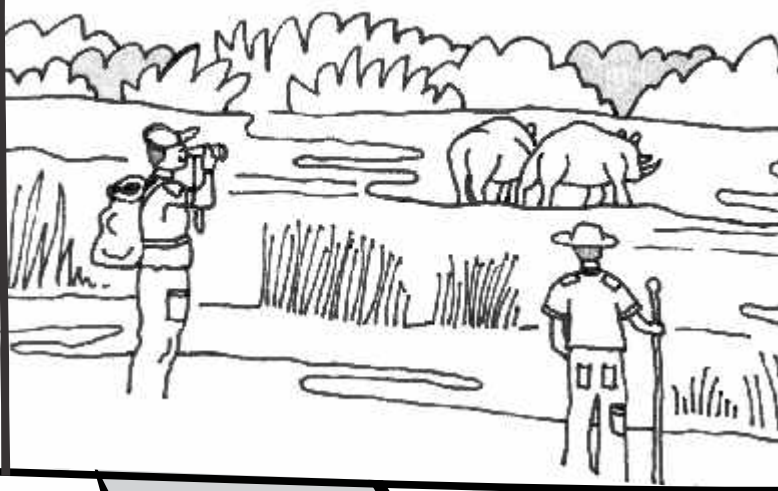
Wildlife attracts a lot of tourists. Tourists enjoy travelling to other countries to see their wildlife. Tourists are important because they bring money and jobs to local communities.

The main reason for looking after wildlife and their habitats is so that they can continue to live safely.

By looking after wildlife, future generations of people can enjoy the natural world and the amazing plants and animals that live in it.

Looking after wildlife keeps the world in balance. Every single animal and plant is important because they keep ecosystems and the quality of our lives healthy.





HOW CAN WE HELP TO LOOK AFTER WILDLIFE?

- We can teach people and raise awareness about the importance of wildlife.
- We can rebuild their habitats. For example, we could regrow forests that have been destroyed.
- We can move them to safer natural environments.
- We can protect and support them wherever they already are.

ACTIVITY

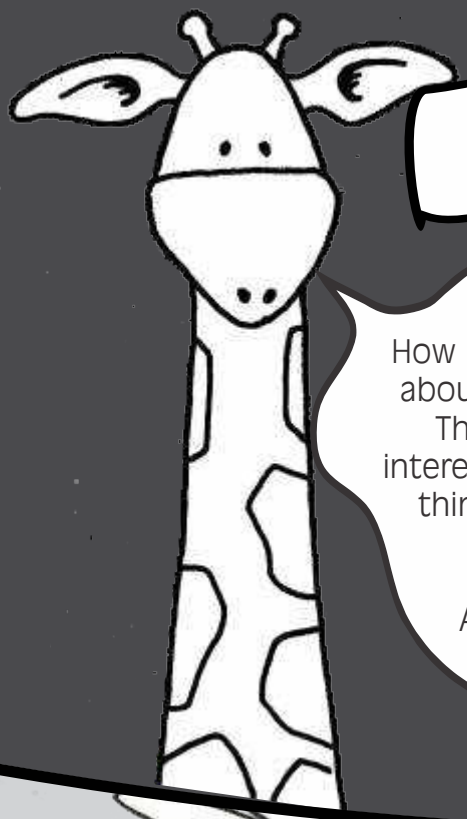
Be a teacher!

Share what you have learned about looking after our wildlife with your family and friends.

Saving our world's wildlife is important to all of us now and for everyone who comes after us. Every little step in the right direction counts!

GIRAFFE

LONG LEGS, LONG NECKS AND LOTS OF BROWN PATCHES



How much do you know about giraffe in Africa? There are so many interesting and surprising things about giraffe.

Let us explore Africa's giraffe.



DID YOU KNOW?



Instead of only one kind, there are actually 4 different kinds of giraffe.



These 4 kinds of giraffe are called **species**.

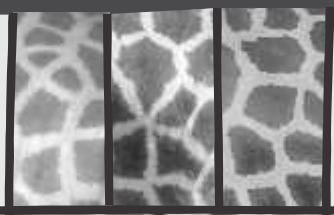
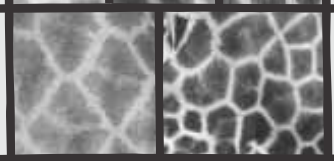
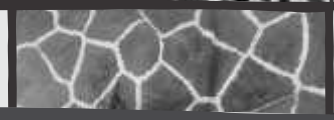


They are the **Masai** giraffe, the **Northern** giraffe, the **Reticulated** giraffe and the **Southern** giraffe.



There is more: the Masai, Northern and Southern giraffe are made up of several **subspecies**.

GIRAFFE TREE

SPECIES		SUBSPECIES
Northern giraffe		Kordofan giraffe Nubian giraffe West African giraffe
Southern giraffe		Angolan giraffe South African giraffe
Masai giraffe		Luangwa giraffe Masai giraffe
Reticulated giraffe		

Even though all giraffe look very similar, can you see that the patterns of the different species are actually not quite the same?

WHERE DO GIRAFFE LIVE?

Giraffe live in 21 countries throughout Sub-Saharan Africa, from South Africa and Namibia in the south, to Uganda and Kenya in East Africa, and across Central African countries like Chad to Niger in West Africa.

MASAI GIRAFFE



Subspecies:
Masai giraffe

Kenya,
Tanzania

Subspecies:
Luangwa giraffe

Zambia

RETICULATED GIRAFFE



Kenya,
small groups in Ethiopia,
Somalia

NORTHERN GIRAFFE



Subspecies:
West African giraffe

Niger

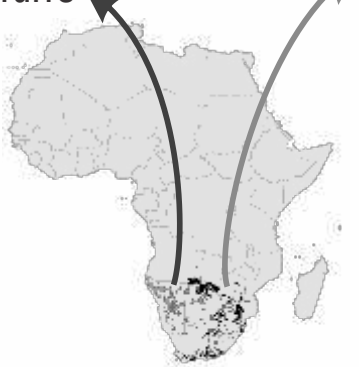
Subspecies:
Kordofan giraffe

Chad,
Cameroon,
Democratic Republic of Congo,
Central African Republic,
South Sudan

Subspecies:
Nubian giraffe

South Sudan,
Ethiopia,
Kenya,
Uganda

SOUTHERN GIRAFFE



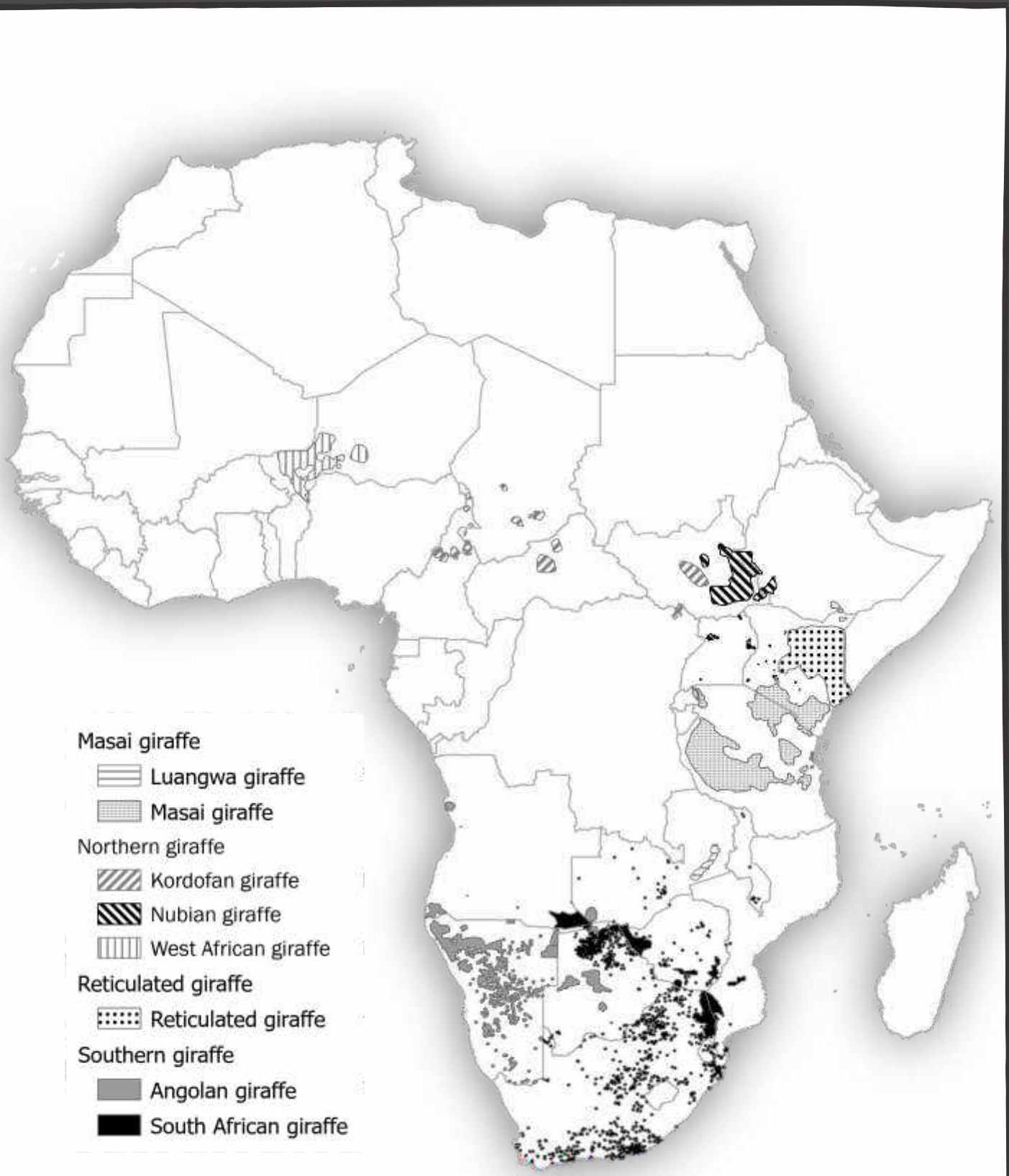
Subspecies:
Angolan giraffe

Namibia,
Botswana,
Angola,
Zimbabwe

Subspecies:
South African giraffe

South Africa,
Botswana,
Mozambique,
Zambia,
Zimbabwe,
Angola,
Namibia

GIRAFFE IN AFRICA





Interesting facts about giraffe

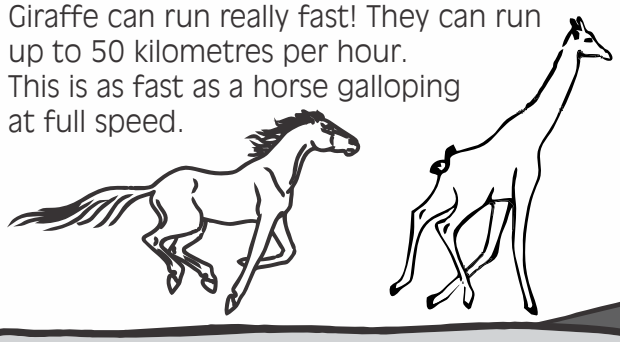
Just like a human fingerprint, no two giraffe patterns are the same. Researchers use their patterns to recognise individual giraffe in the wild.

The giraffe is the tallest animal in the world.

Giraffe can live for over 30 years.

A new-born giraffe stands about 1.8 metres tall. This is taller than the average adult human.

Giraffe can run really fast! They can run up to 50 kilometres per hour.
This is as fast as a horse galloping at full speed.

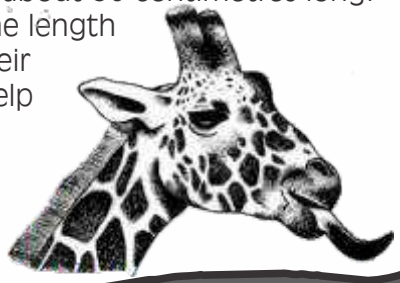


Like humans, giraffe also have 7 bones in their necks. Their necks are just longer and their bones are bigger.

An adult giraffe's neck is about 2 metres long. This is the same height as a door.

Giraffe usually have a lot of ticks living on them. And because of the way they are built, it is very difficult for them to groom themselves. So, they rub their bodies against trees to brush the ticks off. Sometimes they get help from birds, who pick the ticks off from places that are difficult to reach.

An adult giraffe's tongue is a blue-purple colour, and it is about 50 centimetres long. This is almost the length of your arm. Their long tongues help them to reach leaves that are right at the top of trees.



When giraffe need to defend themselves, they can kick in all directions.

Giraffe's horns are called ossicones. When they are born, giraffe's ossicones lie flat on their head. As they grow older their ossicones grow straight, and after some more time they become part of their skull.

How do you tell the difference between male and female giraffe?
To tell the difference, you need to look at their ossicones.



Male giraffe's ossicones are thick and they often have no hair on top.



Female giraffe's ossicones are thinner and they have fluffy hair on top.

Giraffe do not eat grass. They eat leaves, seeds, twigs, and flowers from trees and bushes.

Giraffe chew and suck on bones. They do this to add minerals to their diet.

The reason why giraffe have to open their front legs wide apart or bend their legs to drink is because their necks are too short to reach the water on the ground.

Giraffe have a really big heart. It weighs about 11 kilograms. Their heart needs to be big and strong because it must pump blood all the way up their long necks to the brain.

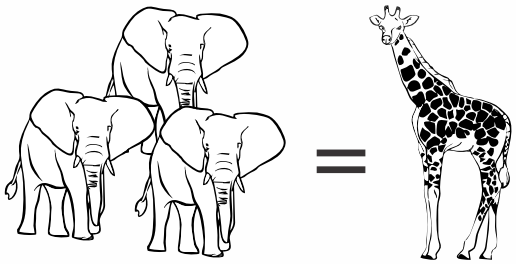
A giraffe can eat 45 to 60 kilograms of food in a day, but only poos out 15 kilograms. This is a big difference. Where does it go?
Just like cows, the giraffe is a ruminant. This means that their stomachs are divided into 4 parts, and because of this they have 4 chances to digest their food. After they swallow, they bring the food up from the stomach, chew it again, and then swallow it again. They do this several times. It means that giraffe and other ruminants make sure that they use all the nutrients that are in each mouthful of food.

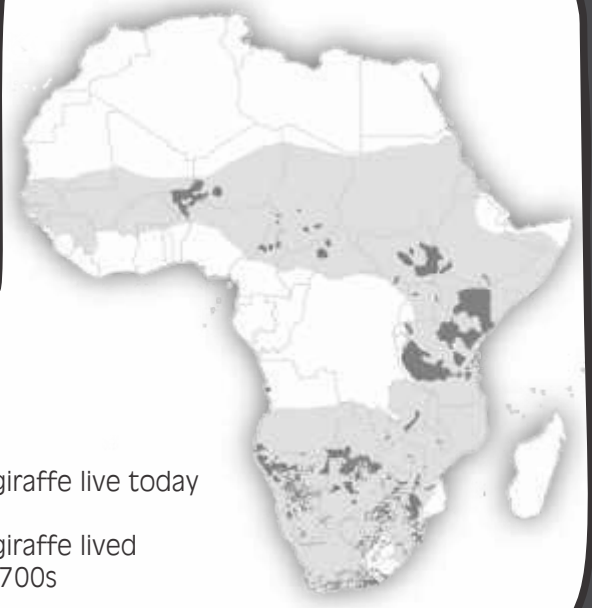
HOW MANY GIRAFFE ARE THERE IN AFRICA?

Long time ago, giraffe lived all over Africa, and there were more than 1 million of them. Today, there is a combined total of only 140,000 giraffe remaining in Africa and not all giraffe are the same species.

Almost 50% of all giraffe live in southern Africa.

For every 3 elephants in Africa, there is only one giraffe.





Where giraffe live today

Where giraffe lived in the 1700s

The IUCN Red List

There is a special list of all the plants and animals in the world that are in trouble. This special list is called the IUCN Red List: The International Union for Conservation of Nature Red List of Threatened Species. Three giraffe species are on this list.

Already, giraffe no longer exist in at least 7 African countries.

In many parts of Africa giraffe are in serious trouble. They need our help.

The Masai, Northern and Reticulated giraffe are all listed as threatened on the IUCN Red List. The Southern giraffe are doing well.

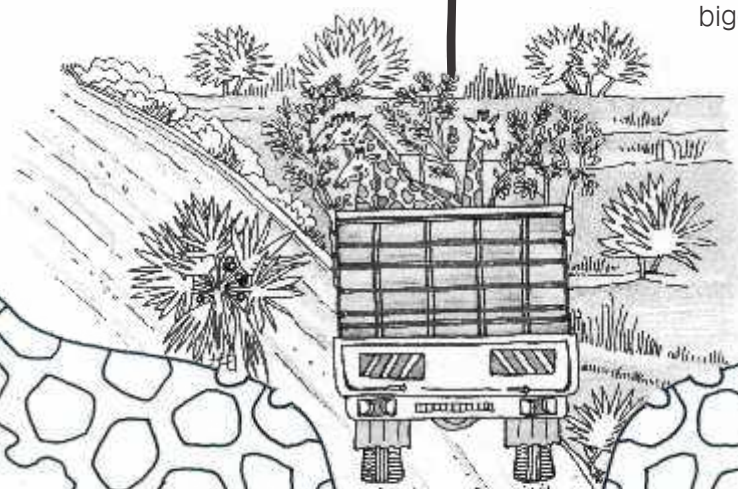
Some of these populations of giraffe are rarer than mountain gorillas or the black rhinoceros.

For example: in Niger, there are just over 660 West African giraffe in the wild.

GCF works with and supports many African countries to protect giraffe so that they can live happily and safely, wherever they are.

In some countries GCF moves giraffe back to areas where they used to live long ago. This helps to protect habitat for giraffe and other wildlife.

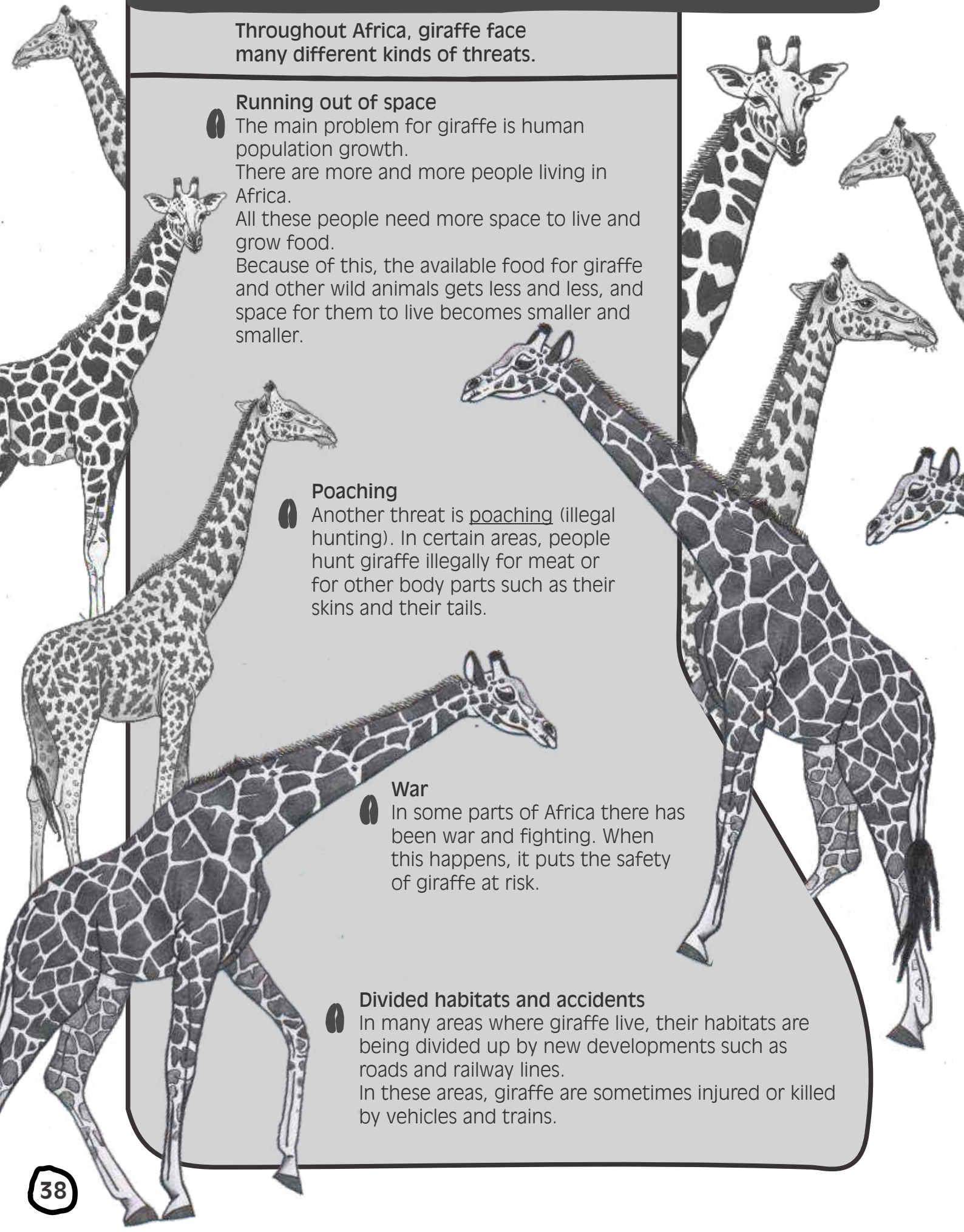
The good news is that there are a few populations of giraffe that are getting bigger, for example, in Namibia, Niger and Uganda.



These giraffe are happily travelling to their new, safer home.

WHAT ARE THE MAIN THREATS FOR GIRAFFE?

Throughout Africa, giraffe face many different kinds of threats.



Running out of space

The main problem for giraffe is human population growth.
There are more and more people living in Africa.
All these people need more space to live and grow food.
Because of this, the available food for giraffe and other wild animals gets less and less, and space for them to live becomes smaller and smaller.

Poaching

Another threat is poaching (illegal hunting). In certain areas, people hunt giraffe illegally for meat or for other body parts such as their skins and their tails.

War

In some parts of Africa there has been war and fighting. When this happens, it puts the safety of giraffe at risk.

Divided habitats and accidents

In many areas where giraffe live, their habitats are being divided up by new developments such as roads and railway lines.
In these areas, giraffe are sometimes injured or killed by vehicles and trains.

LET US CELEBRATE THE WORLD'S TALLEST ANIMAL

on the longest day/night of the year.

21 JUNE IS WORLD GIRAFFE DAY

On World Giraffe Day, we raise awareness about giraffe and celebrate them all over the world.
You could celebrate the next World Giraffe Day with us!

There are lots of ways for you to do this.

BE A GIRAFFE FOR THE DAY

Redraw or photocopy the giraffe mask on page 47 on to another piece of paper. Then, cut it out and colour it in. I live in Namibia, so I am an Angolan giraffe (a subspecies of the Southern giraffe).

Where do you live? _____

Which giraffe species or subspecies will you be? _____

DRAW YOUR OWN GIRAFFE

Page 46 shows you how to draw a giraffe. You could also draw a family of giraffe standing in their habitat with trees and plants.

BE A TEACHER

- You can help other people to understand why it is important to look after and protect the environment and giraffe by sharing what you know with them.
- You could also create your own little classroom.
- Gather a group of friends, family members or people from your community.
- Invite them to your classroom, and then share information from your Nature Workbook about giraffe with them.

SHARE FUN GIRAFFE PICTURES WITH US

- **How long is your tongue?** Send us a picture of how far you and your friends can stick out your tongues.
- **Pretend you are a giraffe drinking.** Ask a friend or someone in your family to take a picture of you and send it to us.

Share your World Giraffe Day fun with us on our social media:

facebook.com/giraffeconservationfoundation
instagram.com/giraffe_conservation



Why do people never believe a giraffe?

Because they tell tall stories.

Why did Lady giraffe leave her boyfriend?

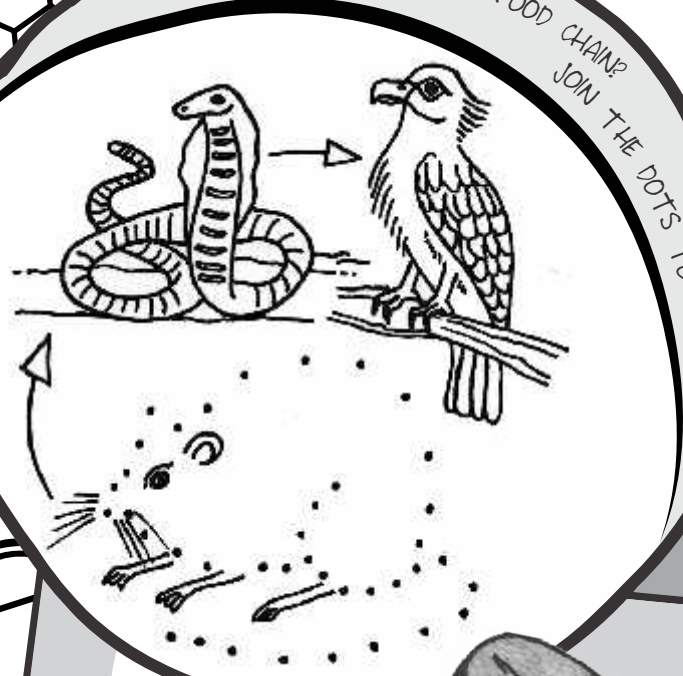
Because he was a cheetah.



FUN AND GAMES

WHAT IS MISSING IN THE FOOD CHAIN?

JOIN THE DOTS TO FIND OUT.



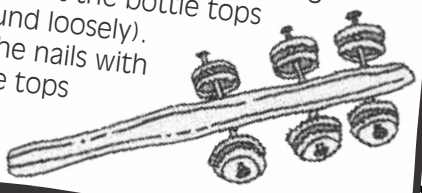
UNSCRAMBLE THESE WORDS

The letters in these words have been mixed up. Each word begins with the correct letter. See if you can unscramble them to make the correct words.

e o s c t y s m e _____
g e f f i r a _____
A r c f i a _____
w e a t r _____
r c l e y c e _____

Make your own Tambourine

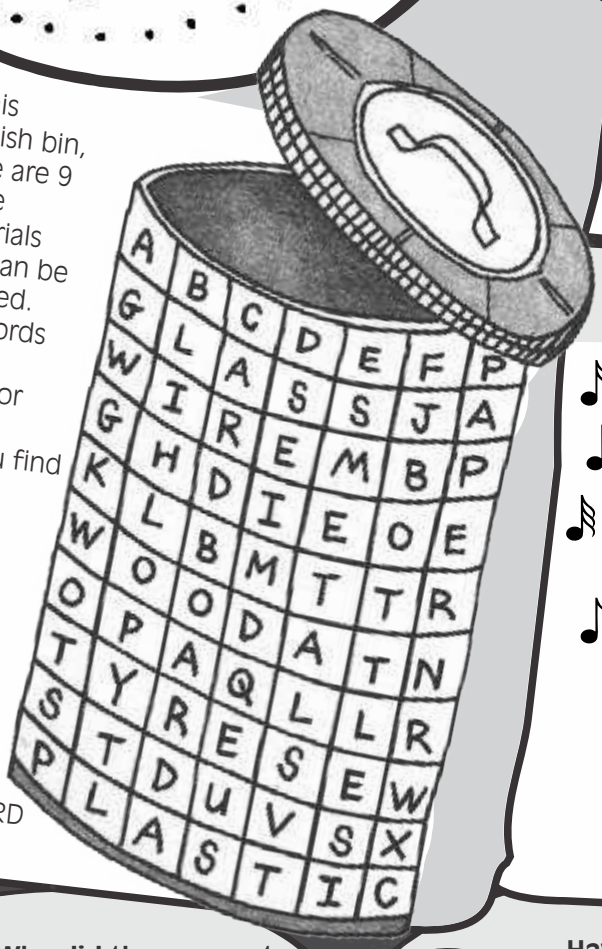
- You will need nails, bottle tops, a stick and a hammer.
- Make holes in the bottle tops using a nail and the hammer.
- Thread two or three bottle tops on to the nails (the holes must be just big enough so that the bottle tops move around loosely).
- Hammer the nails with their bottle tops into the stick.



RUBBISH BIN CROSSWORD

In this rubbish bin, there are 9 waste materials that can be recycled. The words can go across or down. Can you find them?

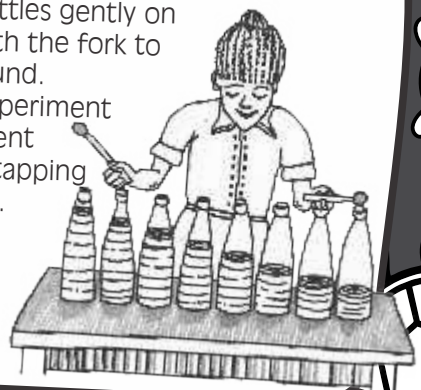
PLASTIC
GLASS
METAL
TYRES
PAPER
WIRE
WOOD
CARDBOARD
BOTTLES



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

Make your own Xylophone

- You will need used empty glass bottles, water and a fork.
- Fill the bottles with water at different levels.
- Tap the bottles gently on the top with the fork to make a sound.
- You can experiment with different things for tapping the bottles.





Why did the man not pick up the packet of cake flour that he bumped off the shelf?

Because it said Self Raising Flour on the label.



Have you heard the joke about the giraffe's neck?

Get ready, it is a long one.

What do giraffe eat?

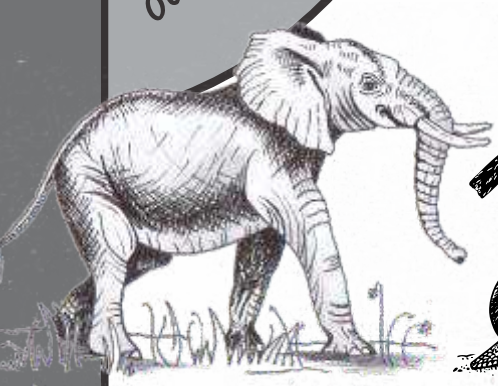
Macaroni and leaves.



Answers: Unscramble the Words: ecosystem, giraffe, Africa, water, recycle

Make an animal out of animals

- The second letter from each animal clue will spell the name of another animal.
- Write down the name for each animal.
- Then draw a circle around the second letter in each animal's name to spell the new animal.

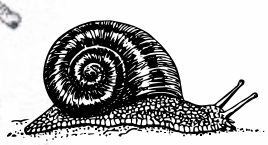




2 _____



3 _____



4 _____

1 _____ = _____



Teacher: "What is your favourite animal?"

Samuel: "I really like the hippopotamus."

Teacher: "Will you spell it for me, please?"

Samuel: "Uh, oh... I think I like ants better."



What kind of rocks are formed underwater?

Wet ones!

When do giraffe have eight legs?

When there are two of them.

What is What?

- The following list includes living things, non-living things and man-made things.
- Look carefully through the list.
- Write each one under its correct heading.

Living	Non-living	Man-made

wind frog fish human building television mountain soil litter bird car road giraffe book feather tree water butterfly wood grass sun

Answers: Make an animal out of animals: elephant, bird, mouse, snail = lion

GIRAFFE QUIZ

How much have you learnt about giraffe?
Test your knowledge with this quiz.
Tick your answers in the boxes.

All the answers are in this Nature Workbook

1. Giraffe are

a) Nocturnal ☐
b) Diurnal ☐
c) Cathemeral ☐

2. How many giraffe are there in Africa today?

a) More than 150 000 giraffe ☐
b) 311 000 giraffe ☐
c) About 117 000 giraffe ☐

3. Giraffe are

a) Herbivores ☐
b) Omnivores ☐
c) Carnivores ☐

4. Why do giraffe suck and chew on bones?

a) Because they like the taste ☐
b) To add minerals to their diet ☐
c) Because there is not enough other food ☐

5. Giraffe like to eat

a) Leaves, twigs, seeds and flowers ☐
b) Fish and chips ☐
c) Insects ☐

6. Giraffe can run up to

a) 15 kilometres per hour ☐
b) 50 kilometres per hour ☐
c) 65 kilometres per hour ☐

7. You can tell the difference between male and female giraffe by their

a) Tails ☐
b) Ossicones ☐
c) Tongues ☐

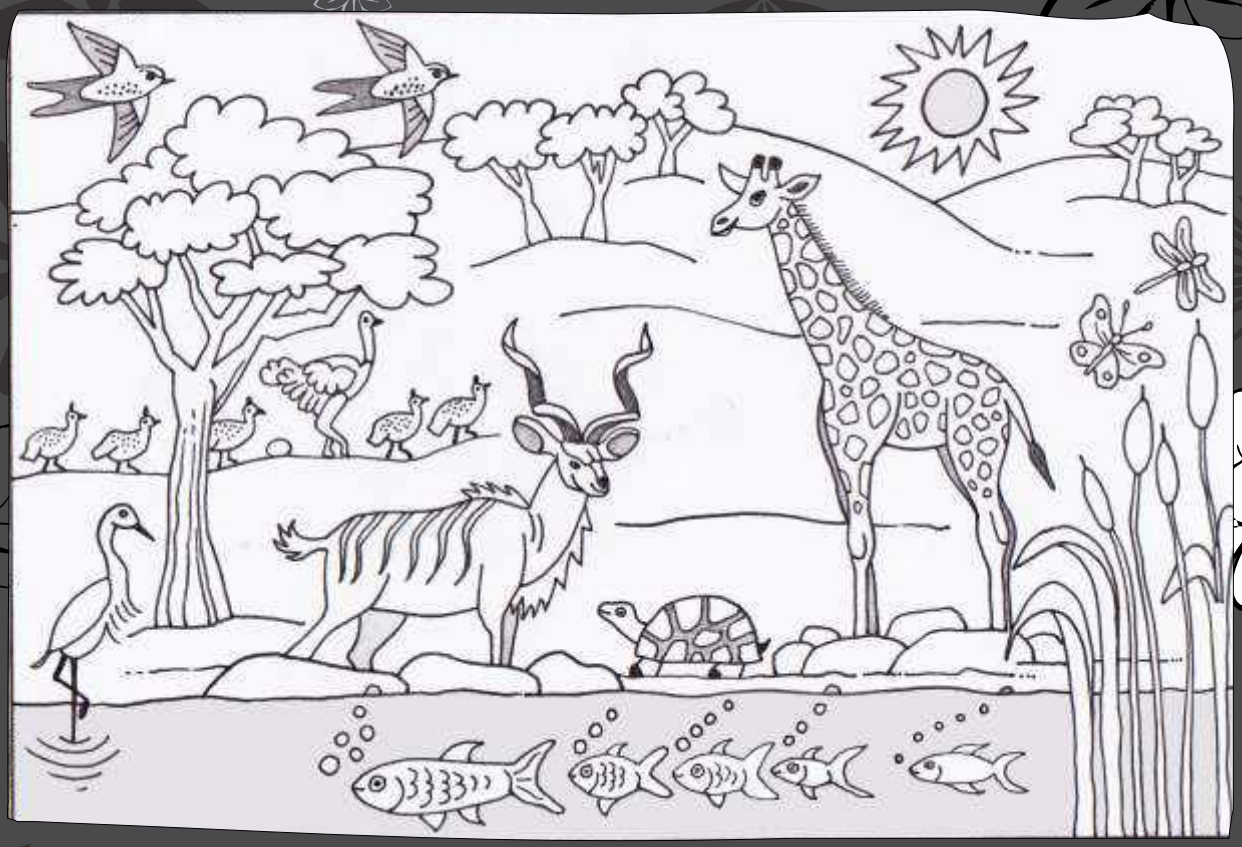


8. What does the IUCN Red List stand for?

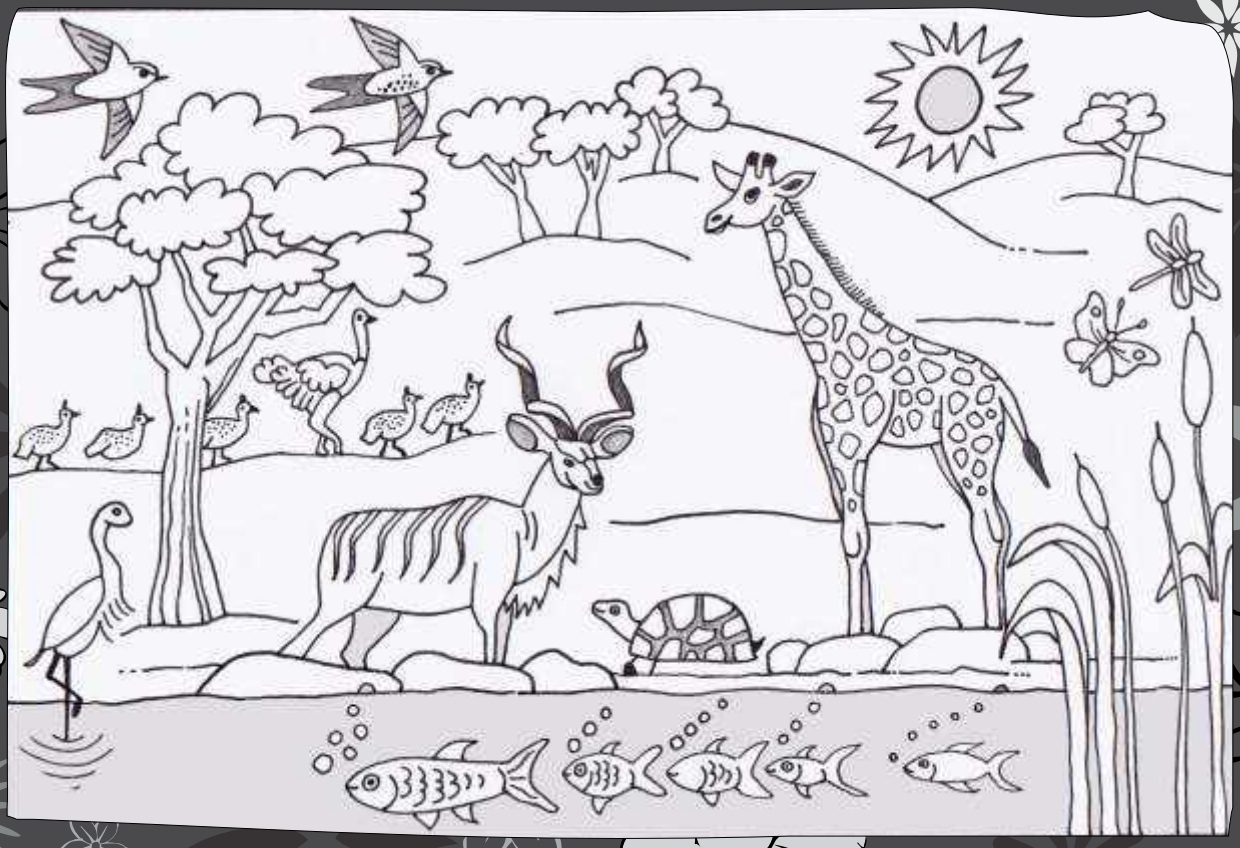
a) International Understanding of Care and Nature Red List ☐
b) International Union for Conservation of Nature Red List ☐
c) Incorporated Agency for Caring and Nurturing Red List ☐

rawpixel

SPOT THE DIFFERENCE



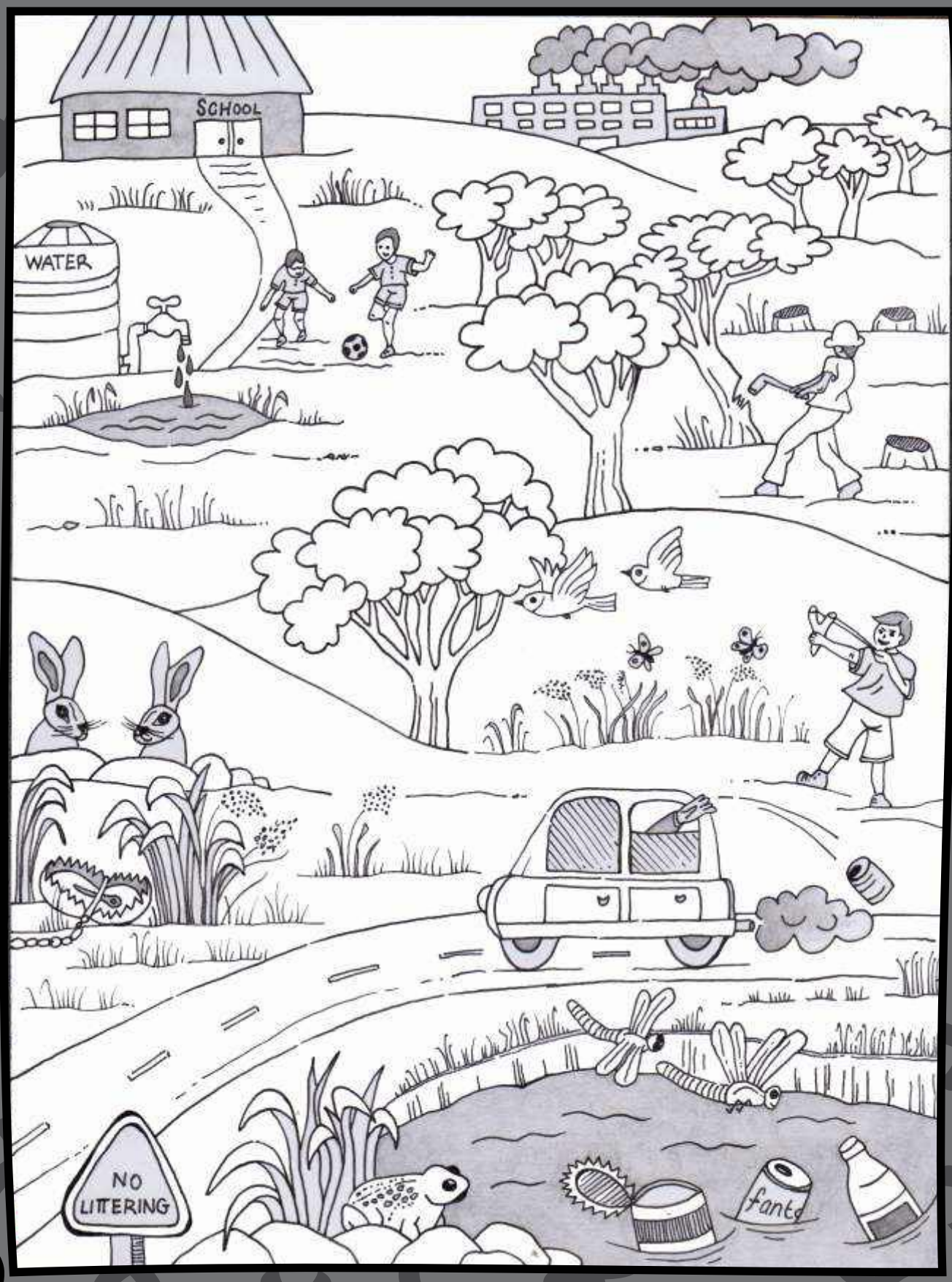
In the picture below, fourteen things are missing. Compare it to the picture above, and then draw a circle around the place where each thing is missing.



ANSWERS: 1) spots on flying swallow's body 2) patches on giraffe's neck 3) a river plant 4) tortoise's back leg 5) a fish's eye 6) ostrich's egg 7) big tree's left branch 8) dots on butterfly's wings 9) rock behind tortoise 10) hair on kudu's shoulder 11) tree on top of hill 12) water bird's beak 13) guineafowl's legs 14) the kudu's tail

WHAT IS WRONG?

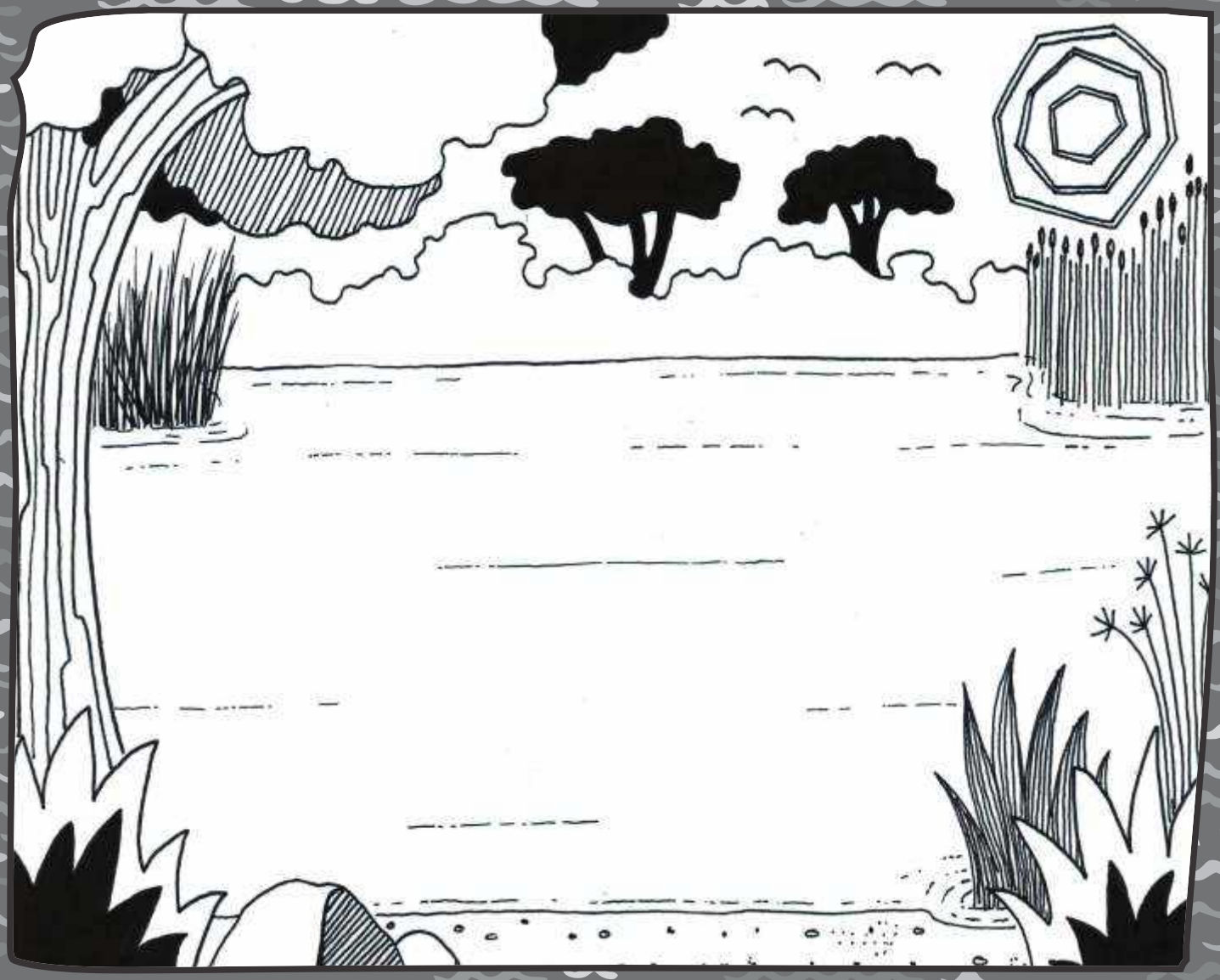
There are seven environmentally unfriendly things happening in these different environments. See if you can find them, and draw a circle around each one.



WATER-LIVING ANIMALS

Many creatures live in water all the time, and other creatures live in water only some of the time.

- For each animal that lives some of the time in the water, draw an arrow from it to the bottom edge of the river.
- For each animal that lives all the time in the water, draw an arrow from it to the middle of the river.
- If you would like to, you can draw the animals in or on top of the water and colour the whole picture in.



Ostrich

Duck

Crocodile

Lion

Frog

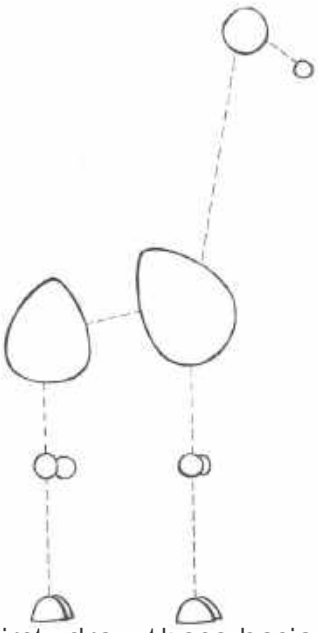
Fish

Tadpole

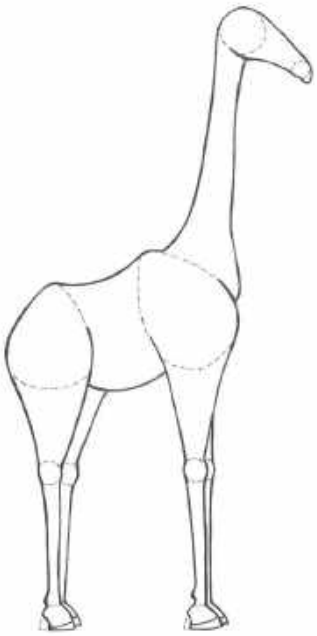
Tortoise

Hippopotamus

LEARN HOW TO DRAW A GIRAFFE!

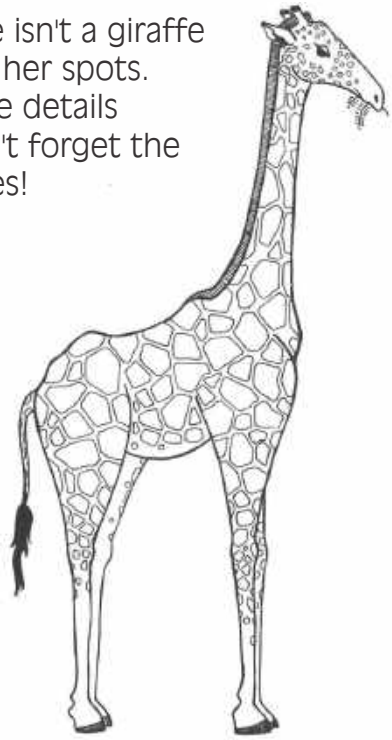


First, draw these basic shapes and the dotted lines between them. Remember to do them softly in pencil so you can rub them out later.



Now, draw around the shapes to get the outline of your giraffe. Take your time, there is no rush!

A giraffe isn't a giraffe without her spots. Fill in the details and don't forget the ossicones!

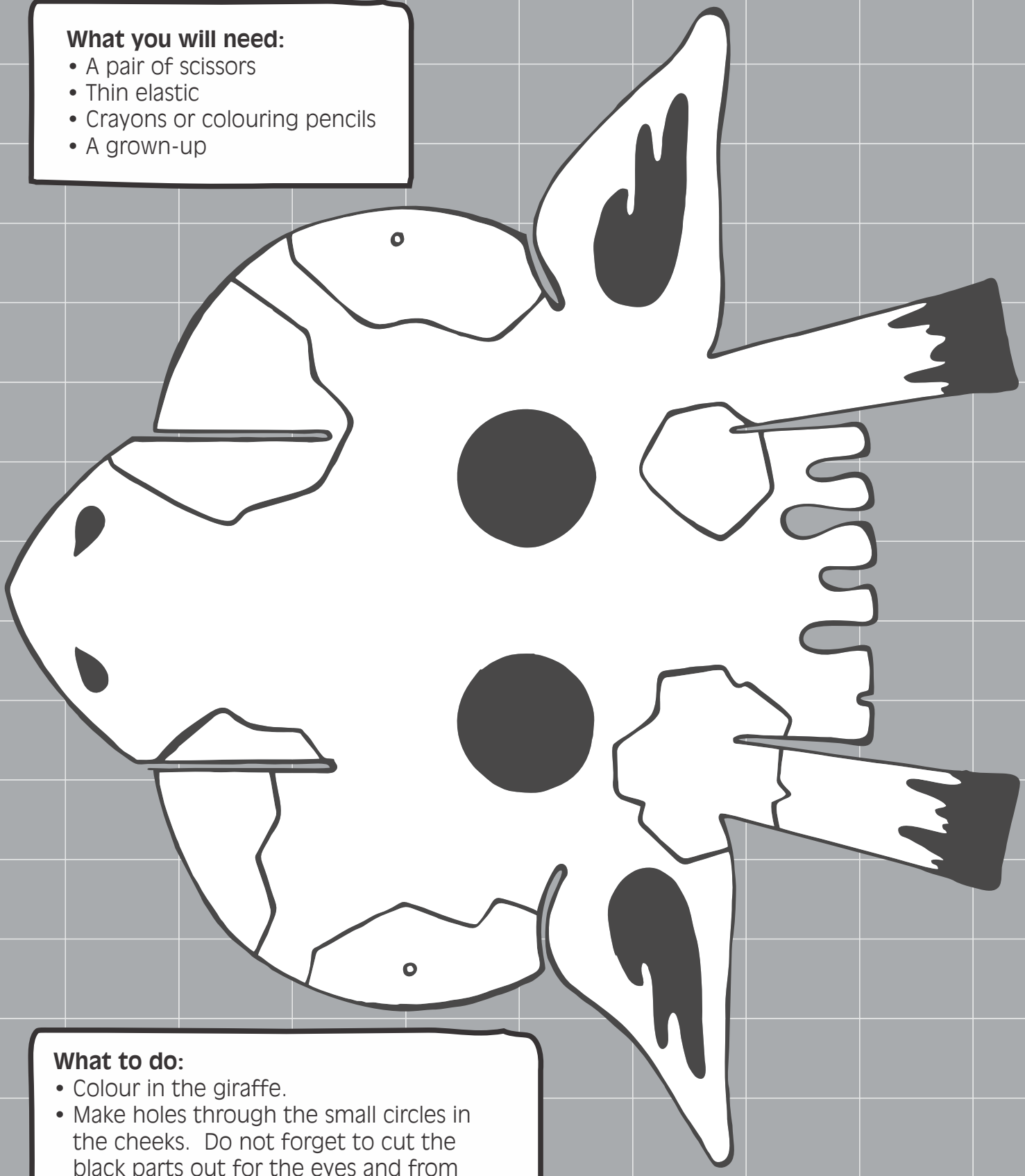


Well done, you've drawn a giraffe! Doesn't she look happy? Now colour her in.

BE A GIRAFFE FOR THE DAY

Make a giraffe mask!

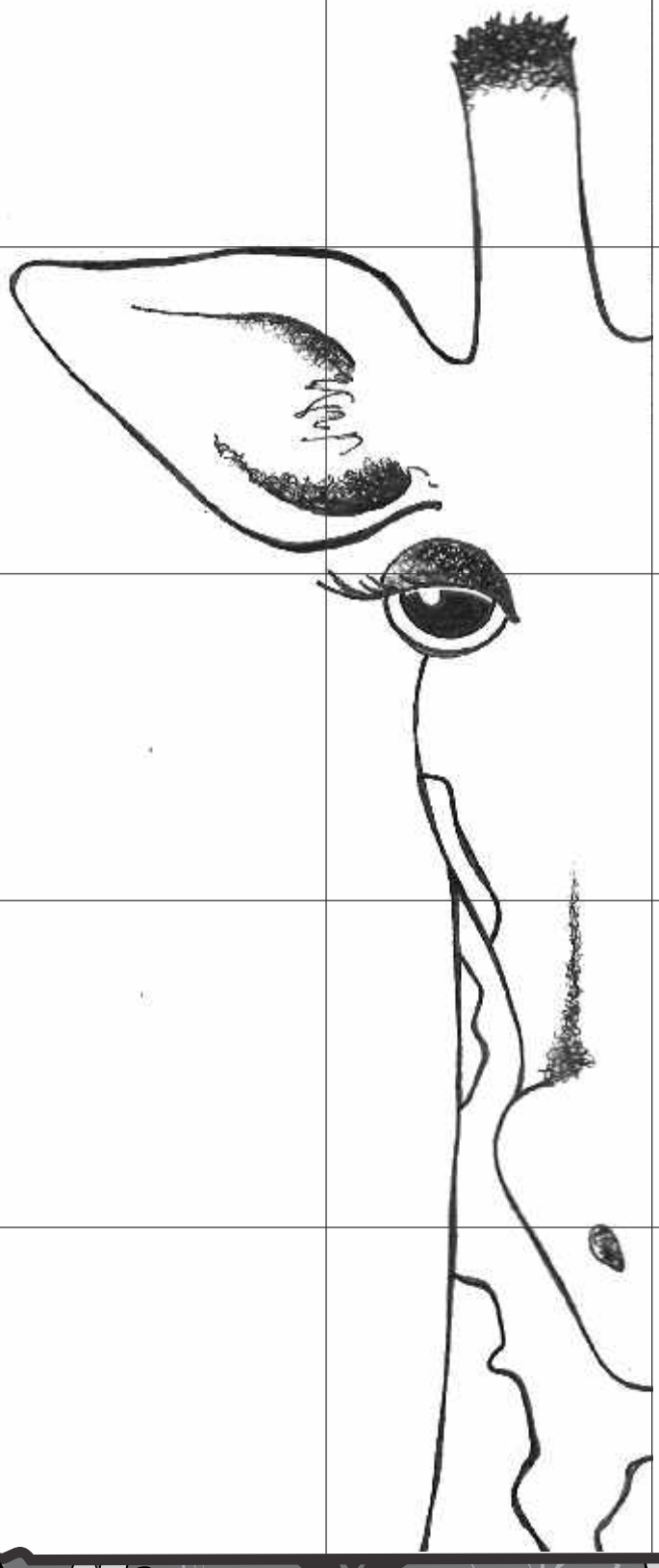
What you will need:
- A pair of scissors
- Thin elastic
- Crayons or colouring pencils
- A grown-up



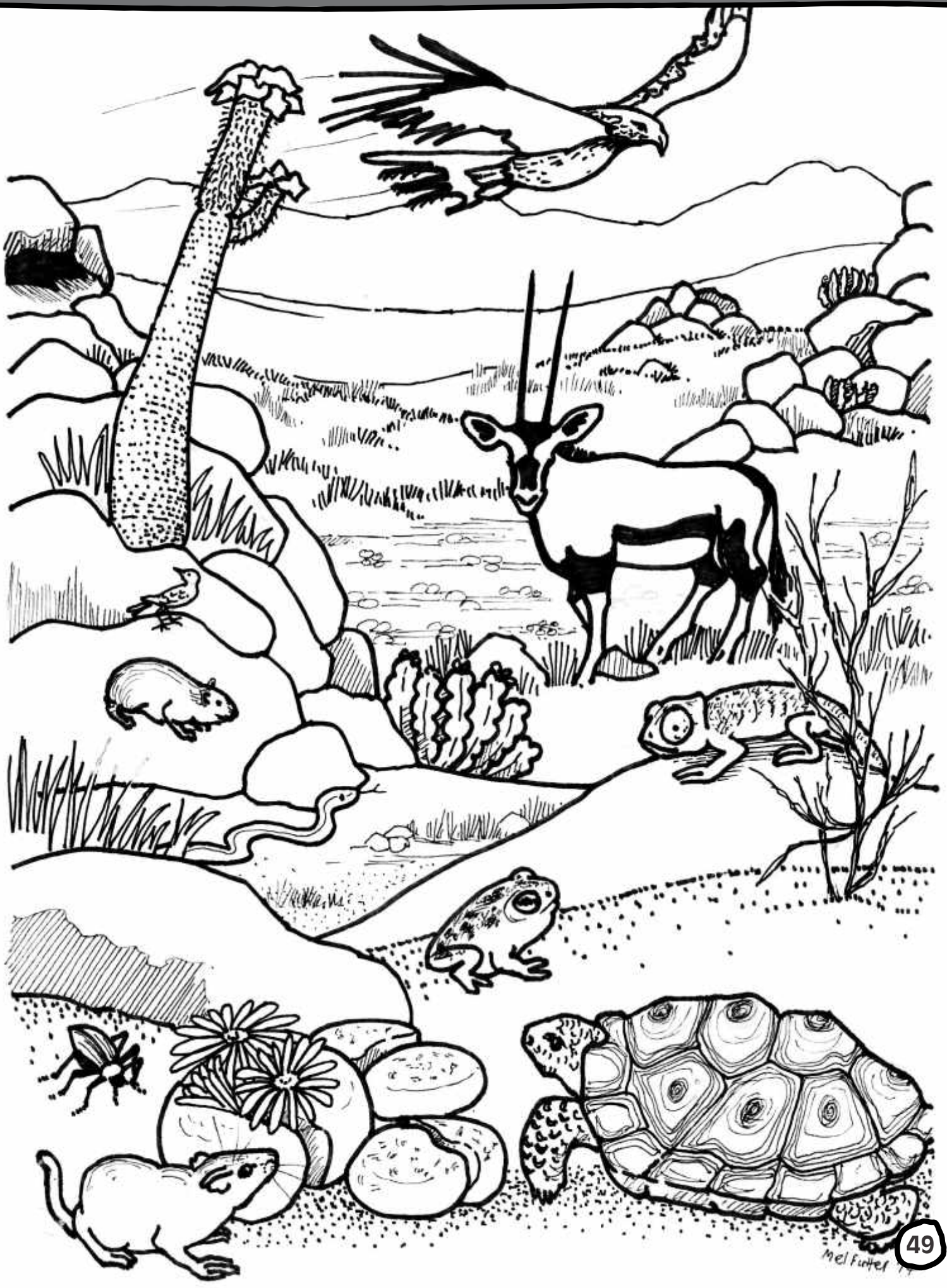
What to do:
- Colour in the giraffe.
- Make holes through the small circles in the cheeks. Do not forget to cut the black parts out for the eyes and from the nose.
- Attach the elastic to the holes.
- Put the mask on. Now you are a giraffe!

FOLLOW MY LEADER

Draw the other side of the giraffe's face by copying what you see on the left, and then colour it in.



COLOUR ME IN



ANIMAL DETECTIVE

SEE WHAT YOU CAN FIND

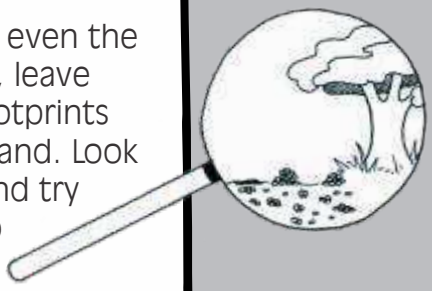


Wherever you are, there will always be wild animals to see. They could be big or very small.
Sometimes you can also see…



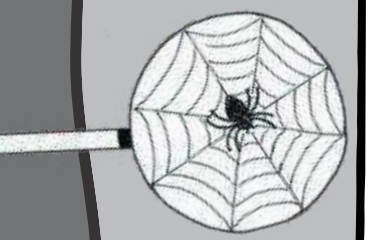
THEIR TRACKS

Lots of animals, even the very small ones, leave behind their footprints (tracks) in the sand. Look out for these and try to find out who they belong to.



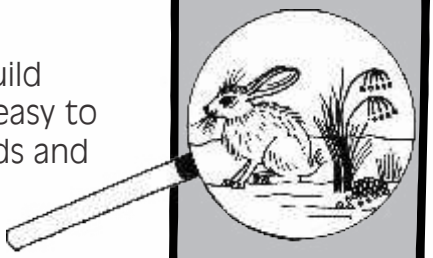
A TERRITORY PATCH

Some animals mark their territory (home area) by peeing and pooing in one place. This sends a strong smelly message to others that someone is already living here.



THEIR HOMES

Some animals build homes that are easy to see. Think of birds and spiders.



THEIR POO

Like us, animals also have to go to the toilet. Look out for piles of poo and see if you can find out who they belong to.

SHHHHHH!



INVESTIGATE

- Spend time in a garden, a park, or any outside area. Find a comfortable place to sit. Sit quietly.
- Listen and look. Look high and low. It is surprising what you will hear and see.
- In your notebook, make a list of all the creatures you see.
- Describe their colours and what they are doing.
- Make another list of all the other things you see (for example, poo and tracks), and what you hear (for example, birds).

GUIDE: SOME OF AFRICA'S ANIMALS AND PLANTS



The following guide includes a few examples of the animals and plants found in Africa. If you would like to know more about all the different animals and plants in your country, there are lots of local books that you could use. Find out where to get these books and have fun learning more.

LEGEND



MOON AND STARS means that these animals are nocturnal.
They are active during the night.



SUN means that these animals are diurnal.
They are active during the day.



MOON, STARS AND SUN means that these animals are cathemeral.
They are active during the day and the night.

WHO EATS WHAT?

HERBIVORES
Herbivores are animals that feed only on grass and plants.
Grazers eat grass.
Browsers eat plant leaves, seeds, flowers, twigs and bark.

OMNIVORES
Omnivores are animals that feed on plants and the meat of other animals.

CARNIVORES
Carnivores are animals that feed on the meat of other animals.

DETRITIVORES
Detritivores feed on rotting plants, animals and poo.

INSECTIVORES
Insectivores are animals that feed on insects.

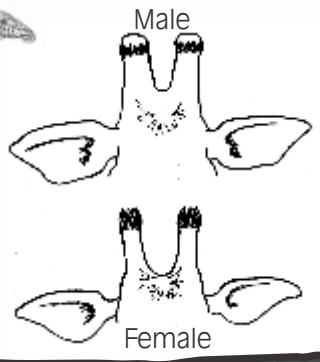
SCAVENGERS
Scavengers feed on the meat of other animals that have already died or been killed by predators. They do not hunt.

PREDATORS
Predators hunt and kill other animals for their food.
Carnivores and insectivores are predators.

Giraffe

Herbivore
Browser: leaves, flowers, fruit and twigs.

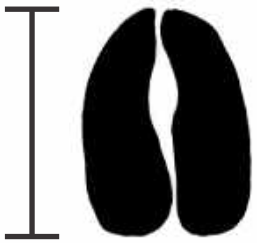






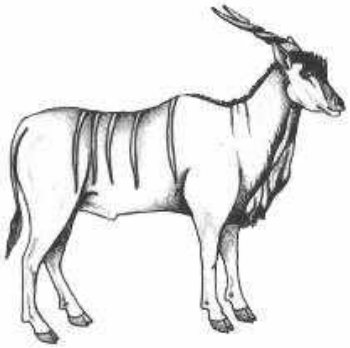
The male Northern and Reticulated giraffe have a middle, third ossicone.

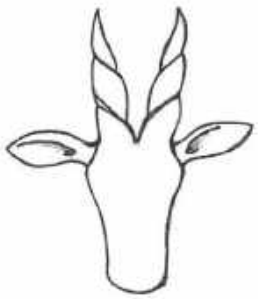
Find out which giraffe are in your country. Go to pages 34 and 35 to help your investigation.

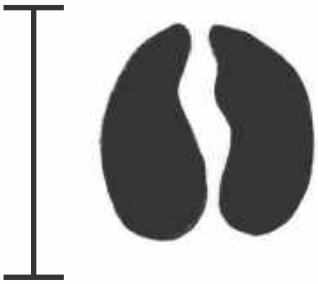


Eland

Herbivore
Browser: leaves, twigs, underground bulbs and fruit (sometimes they will also eat grass, when it is fresh and green)



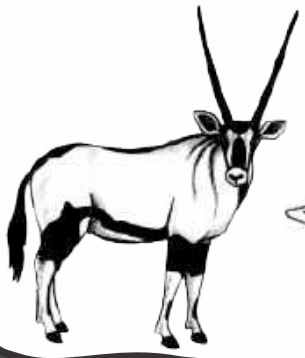




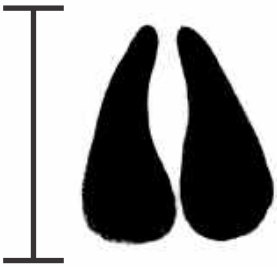
When eland walk, they make a loud, clicking sound. This clicking sound comes from their knees.

Oryx

Herbivore
Browser: leaves, seeds, twigs and flowers.







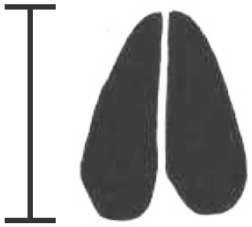
There are four different species of oryx in Africa. The gemsbok oryx is found in southern Africa.
The Arabian oryx is found in Saudi Arabia.
The scimitar oryx is found in North Africa, but there are very few of them left.
The East African oryx is found in eastern Africa.
All of the oryx species have long straight horns, which they use to protect themselves from predators.

Kudu

Herbivore
Browser: leaves, new shoots and fruit.





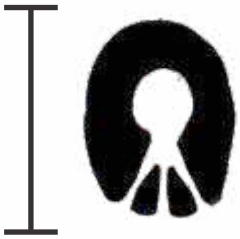


Kudu are very shy and secretive. While they feed during the day, they hide in thick bush as much as they can.

Zebra

Herbivore
Grazer: grass.





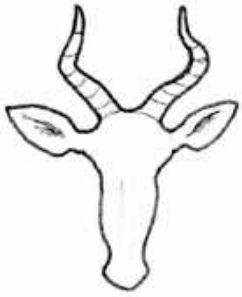
There are three species of zebra in Africa. Burchell's and mountain zebra are found in Southern Africa, and Grevy's zebra are found in East Africa.

Every individual zebra's pattern of stripes is different from each other.

Hartebeest

Herbivore
Grazer: grass (sometimes they will break open wild melons and eat the fruit inside).



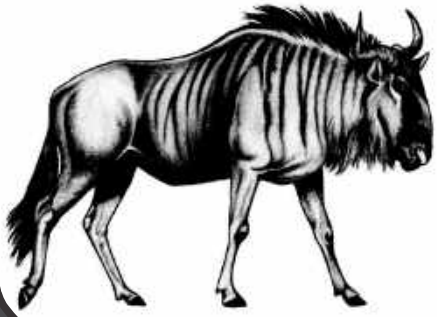




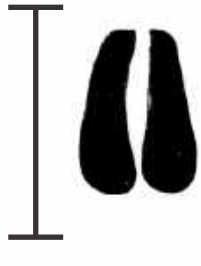
Hartebeest can run extremely fast, reaching a speed of 55 kilometres per hour. They can also keep on running for a very long time.

Wildebeest

Herbivore
Grazer: grass.







There are two species of wildebeest in Africa: the blue wildebeest and the black wildebeest.
The blue wildebeest has long black stripes running down its body, and the black wildebeest has a white tail.

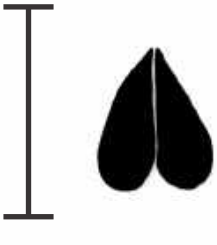
A wildebeest calf can stand and run together with its mother five minutes after being born.

Springbok

Herbivore
Grazer and Browser: grass, leaves, twigs, seeds, fruit, and they also dig up roots.





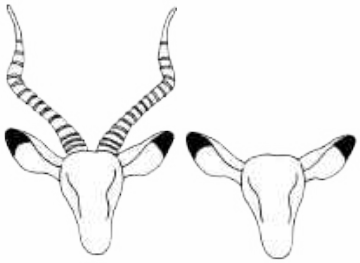


When springbok are frightened or excited, they are able to do the most amazing springing leaps. They can leap into the air with straight legs, a full 2 metres off the ground. This collection of springing leaps is called pronking.

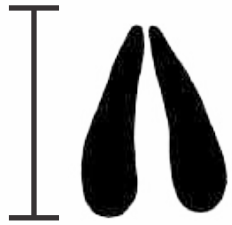
Impala

Herbivore
Grazer and Browser: green grass and bark, leaves, wood and plant stems.





Male Female



5 cm

There are two species of impala in Africa. The black-faced impala are found in southwestern Angola and Namibia, and the common impala are found in southern and central Africa.

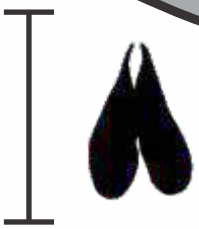
The impala has a very special kind of jump while running to avoid predators.

Thomson's Gazelle

Herbivore
Grazer and Browser: in the wet season they graze fresh green grass, and in the dry season they browse leaves from trees and bushes.







3.8 - 6 cm

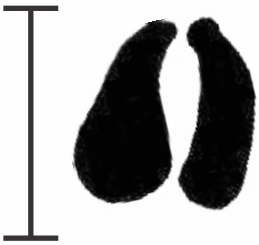
Thomson's gazelle can run very fast, up to 80 kilometres per hour. They also often run in a zig-zag to confuse predators.

African Buffalo

Herbivore
Grazer: grass (sometimes they will also browse on certain shrubs and herbs).







12 -15 cm

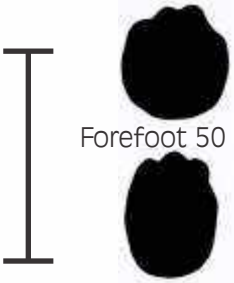
Buffalo will often roll in mud, which helps to get rid of ticks on their skin. They live in big groups and protect each other.

In Africa, there are also forest buffalo. They live in the rainforests of West and Central Africa.

Elephant

Herbivore
Grazer and Browser: most kinds of grass and plants, as well as the bark of certain trees.





Forefoot 50 cm

Hindfoot 60 – 71 cm

In Africa, there are two elephant species: the African savanna elephant and the African forest elephant. The African savanna elephant can live up 80 years.
The African forest elephants live only in the rainforests of West and Central Africa. They are smaller than the African savanna elephants, and they can live up to 70 years.

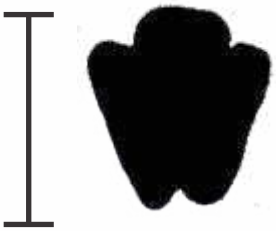
White Rhinoceros

Herbivore
Grazer: grass..





Square-lipped

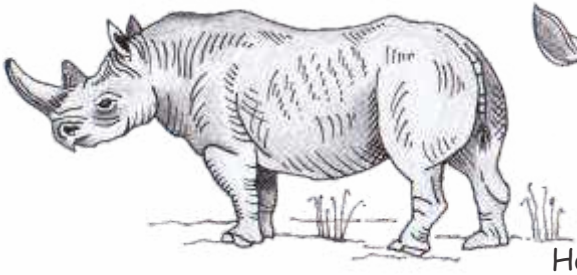


25 – 27 cm

The white rhinoceros has a square-shaped upper lip, and it is larger than the black rhinoceros. An adult male can weigh 2 500 kilograms, which is the weight of 30 men together!

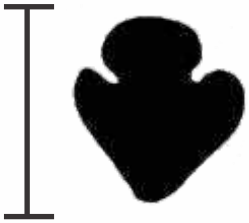
Black Rhinoceros

Herbivore
Browser: leaves, twigs, new shoots and fruit.





Hook-lipped



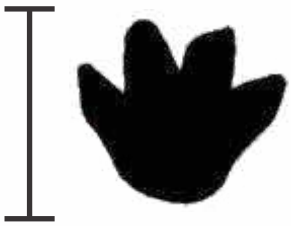
22 - 25 cm

The black rhinoceros has a hook-shaped upper lip. Even though the black rhinoceros are large animals, they can run quite fast. When they chase after unwelcome intruders, they can run at 40 kilometres per hour!

Hippopotamus

Herbivore
Grazer: grass (they prefer short green grass and feed in open areas).



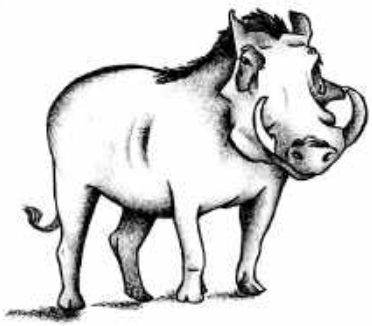


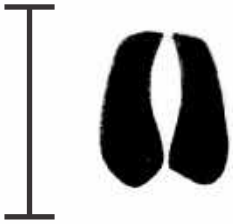
22 - 25 cm

At night, hippopotami leave the water to graze. When they graze, they swing their heads from side to side, cutting the grass with their lips.

Warthog

Herbivore
Grazer: grass, and they also dig up roots..



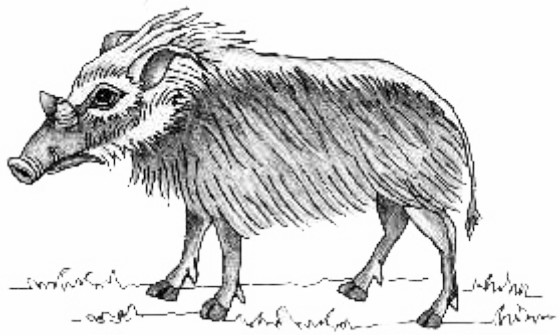


.5 cm

When warthogs graze and dig for roots, they will often bend down on their knees. When warthogs run, they raise their tails so that the family members can easily stick together.

Bush Pig

Omnivore
Roots, leaves and fruit, and scavenge carrion (meat of animals that have already died).



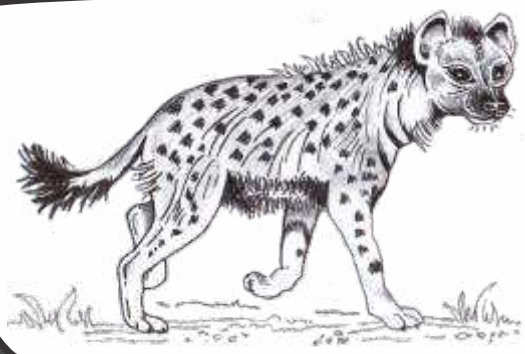


4.5 - 5 cm

Bush pig piglets are born with yellow and brown stripes that disappear after a few months.

Hyena

Omnivore
Predator and Scavenger: hunt antelope, birds, tortoises and hares, scavenge carrion (meat of animals that have already died), and they also eat fruit and termites.





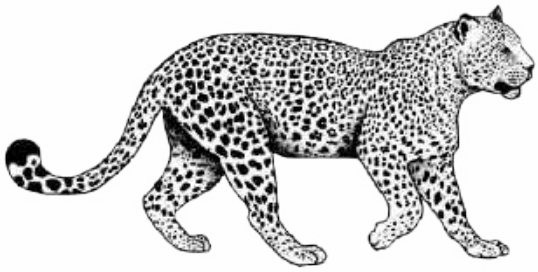
10 - 12 cm

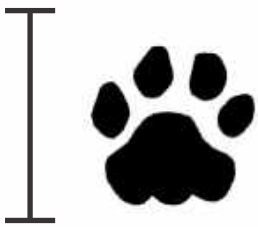
There are three species of hyena in Africa: the spotted, brown and striped hyena.

Hyena play an important role in the environment because they control the spread of disease by cleaning up dead animals.

Leopard

Carnivore
Predator: hunt medium-sized antelope, and also jackals, monkeys, hares, mice, birds and insects.



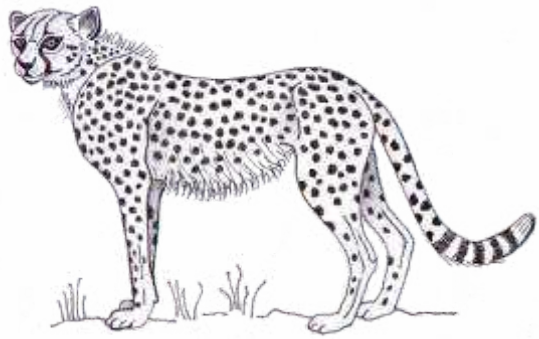


7 – 9 cm

Leopards will store their larger kills, like antelope, in trees or holes in the ground, or they will cover them up with branches and plants. They will return during the following days to continue eating, even if the meat has begun to rot.

Cheetah

Carnivore
Predator: hunt small antelope, ground birds, ostrich and hares.





9 - 10 cm

Cheetah are the fastest land animals on Earth. At full speed, they can run at 112 kilometres per hour.

Lion

Carnivore
Predator and Scavenger: hunt large antelope, tortoises, lizards and hares, and scavenge carrion (meat of animals that have already died).



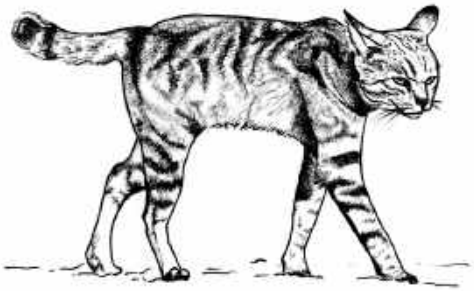


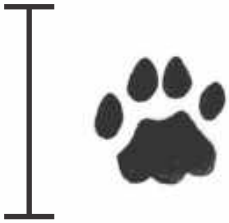
11 - 13 cm

A lion's roar can be heard as far as 5 kilometres away.

African Wild Cat

Carnivore
Predator: mice, hares, birds, insects and lizards.





3.6 cm

African wild cats are extremely important for keeping mice populations under control, especially after good rains.

African Wild Dog

Carnivore
Predator: small to medium-sized antelope and hares.





6.8 - 7 cm

Wild dogs live in large groups and they care for each other, including the elderly. They hunt together in groups, using very clever methods. Wild dogs are in very serious trouble. They no longer exist in at least 19 countries, and there are very few of them left in Africa.

Jackal

Omnivore
Predator: young antelope, mice, birds, lizards and insects. Sometimes they will also eat wild fruit and berries and scavenge dead meat.





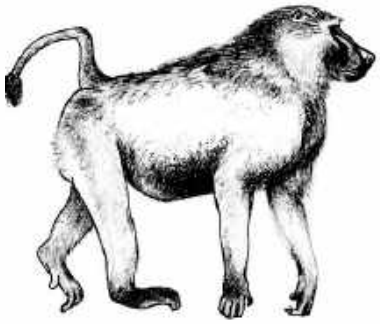
4 cm

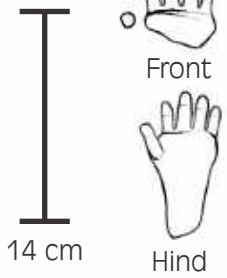
There are three species of jackal in Africa. The common (golden) jackal is found in East and North Africa, and the black-backed and side-striped jackal are found widely throughout Africa.

The black-backed jackal mate for life, and they are very caring of each other and their young. They share all their activities such as hunting, eating and defending their territory. They call each other when they are separated.

Baboon

Omnivore
Grasses, seeds roots leaves, bark, fruit, insects, fish, mice, lizards, birds, scorpions and smaller monkeys.



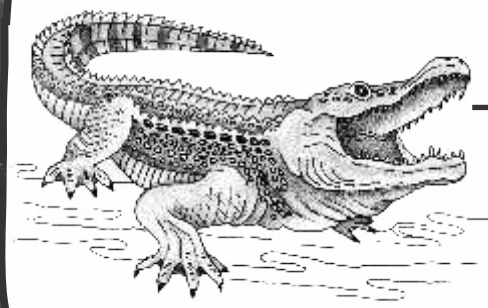


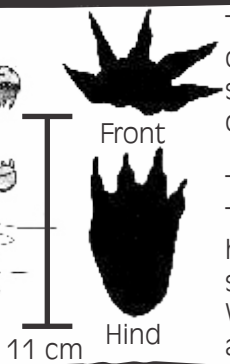
There are five species of baboon in Africa: hamadryas baboon, Guinea baboon, olive baboon, yellow baboon and chacma baboon.

All baboons have a long dog-like snout and hairless pads of thick skin on their buttocks for comfortable sitting.

Crocodile

Carnivore
Predator: fish, birds, wildebeest, zebra and other antelope. They will sometimes even catch young hippopotami.



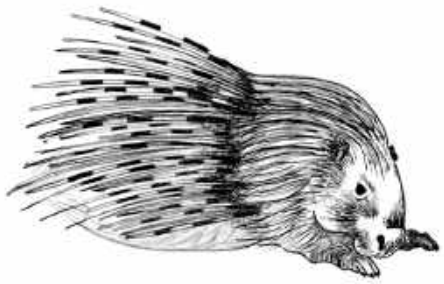


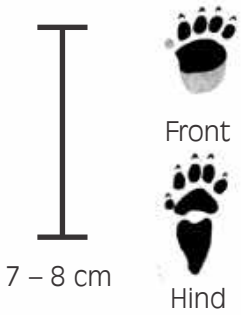
There are five species of crocodile in Africa: the Nile crocodile, West African crocodile, West African slender-snouted crocodile, Central African slender-snouted crocodile, and the African dwarf crocodile.

The Nile crocodile is one of the oldest species on Earth. They have survived over millions of years. After they have eaten their food, the Nile crocodiles swallow large stones to grind the food in their stomachs.
When crocodiles feel threatened, they dive under water and can hold their breath for up to two hours.

Porcupine

Herbivore
Roots, bulbs and bark (sometimes they will eat the meat of dead animals).

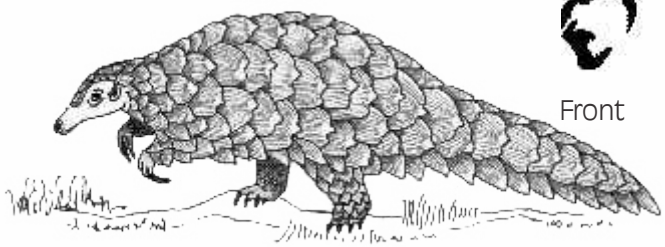


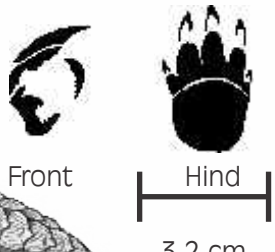


If a porcupine is chased, it will often suddenly stop and raise its quills so that the attacker runs into them.
Although porcupines are nocturnal, they are also sometimes active in the early morning or late afternoon.

Pangolin

Insectivore
Only ants and termites.





There are four different species of pangolin in Africa. Pangolin tongues are long and sticky. They are long to be able to reach the ants and termites, and sticky so that they can collect as many as possible. They can eat up to 20 000 ants and termites in one day.
Most of the time, pangolins walk on their hind legs.

Mongoose

Omnivore
Lizards, rodents, insects, small snakes, birds, frogs, fruit and berries.



2.3 cm



There are 34 different species of mongoose in Africa. Try and find out which ones are in your country.
Some of the mongoose species are famous for attacking and killing venomous snakes.

Helmeted Guineafowl

Omnivore
Ants, termites, snails, worms, frogs, lizards, insects (grasshoppers), fruits and certain grass seeds.



8 cm



The helmeted guineafowl are grey-brown and covered in lots and lots of white spots. Their heads are red and blue. Many farmers in Africa welcome these birds in their crop fields because they eat insects that are pests. They live on the ground but sleep together in trees at night. When they travel to water, they walk in a single line – going one after the other.

Ostrich

Omnivore
Grass, fruit, seeds, fleshy plants, small lizards and insects.



19 cm (the long toe)



The Ostrich is the largest bird in the world. They stand about 2 metres tall. They cannot fly but they can run at 50 kilometres per hour, the same speed as a giraffe – this is amazingly fast!

Flamingo

Herbivore
Very small water algae.



9 cm



There are two species of freshwater flamingo in Africa: the lesser flamingo and the greater flamingo.

Flamingos live in large groups, from hundreds to thousands. Their big bill is a clever filter, which they move from side to side on the surface of the water to catch the tiny algae they live on. Algae are very, very small plants that live in water. More than half of the world's beautiful pink lesser flamingos live on the lakes in Kenya, Ethiopia, and Tanzania.

Vulture

Carnivore
Scavenger: dead animals.





11 - 12 cm

There are 11 different species of vulture in Africa.
Vultures are extremely important birds because they clean up the environment by scavenging on dead animals. They clean up 70% of Africa's dead animals.

Many of Africa's vultures are in trouble. Their numbers are decreasing because they are poisoned, and they are killed for their talons (claws), which are used as medicine.
Imagine what it would be like without vultures to keep the environment clean...

African Fish Eagle

Carnivore
Predator: different kinds of fish.





10 cm

The African fish eagle lives where there is enough water for them to find fish and a good branch to perch on.
Fish eagles will often steal food from other water birds like herons and storks. And surprise, surprise, fish eagles do not only eat fish but also ducks, small crocodiles and flamingos.

Spiders

Insectivore
Predator: insects.

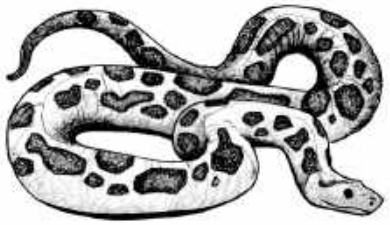


Spiders come in all shapes and sizes. In the world, there are about 40 000 different species of spider. All spiders have eight legs.
To catch their food, some spiders dig holes and others spin webs in the trees or between rocks and grasses on the ground.
The tarantula, the biggest spider, does not use a web to catch its food. Tarantulas live in burrows. They will rush out of their burrow to catch their food. At the entrance of their burrow, they spin a web door to hide behind.



Snakes

Carnivore
Predator: small mammals, rodents, frogs, insects and birds, and some also eat other snakes.



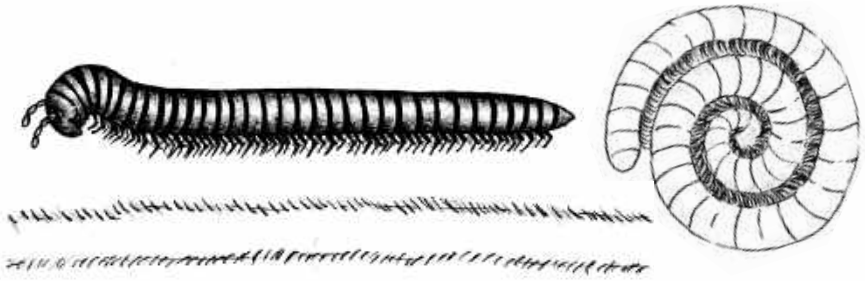


Snakes do not have eyelids, so they do not blink. Snakes smell with their tongue.
Several times a year, snakes shed their skin.



Millipedes

Detritivore
Rotting plant matter.



Millipedes can curl up into tight spirals. There are many different kinds of millipedes. They are either black or brown, and some of them have orange or yellow bands. Some of them can grow to 30 centimetres long. Most predators do not eat them because they give off poisonous gases.

African Baobab Tree



The African baobab grows very tall, up to 25 metres. They lose their leaves for up to 9 months of the year, and their fat trunks store water. These strange-looking trees can live for an extremely long time, more than 1 000 years. Their long round fruit hangs on long stalks, and they are covered with soft hair. The soft white pulp inside the fruit is soaked in water to make a tasty drink. The leaves are used as a vegetable, and the bark is used for weaving and making rope.

Desert Date



These trees are spiky, but they do not have thorns. It is their young, new branches that are very sharp and pointy.
The leaves always grow in pairs, and they are a grey-green colour.
The fruit is like a date, and is yellow when ripe. Lots of animals eat the leaves and fruit, like goats, camels, and wildlife – especially giraffe. The roots and bark are used to treat malaria. The fruit is poisonous to freshwater snails and is used for the treatment of bilharzia.

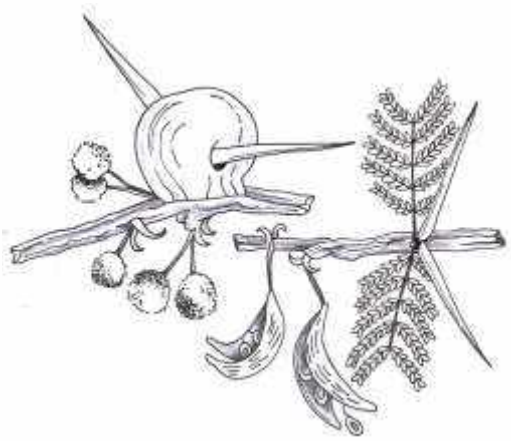
Sycamore Fig

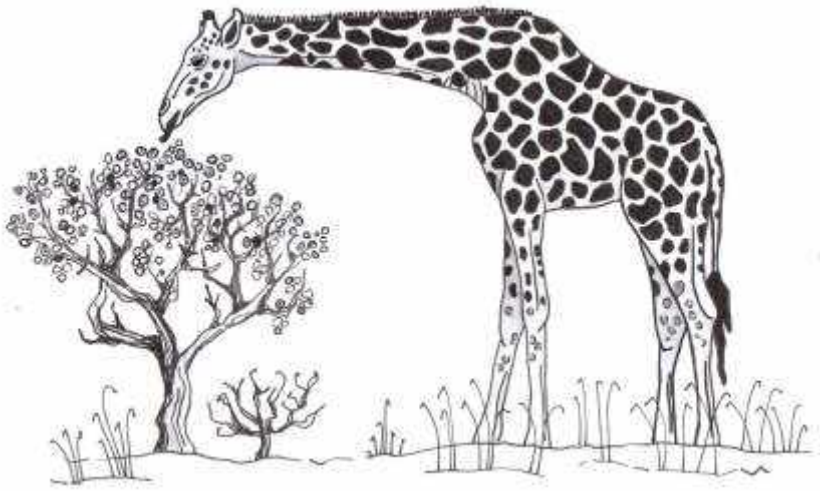


These fig trees become very tall and wide, they can grow up to 21 metres high. Their fruit, the figs, grow from the base of the leaf stalks or in bunches on the main branches and the trunk. The figs are shaped like pears and when they are ripe, they are yellow or red in colour. When the figs are ripe in summer, they are a very important food source for birds, monkeys and baboons.

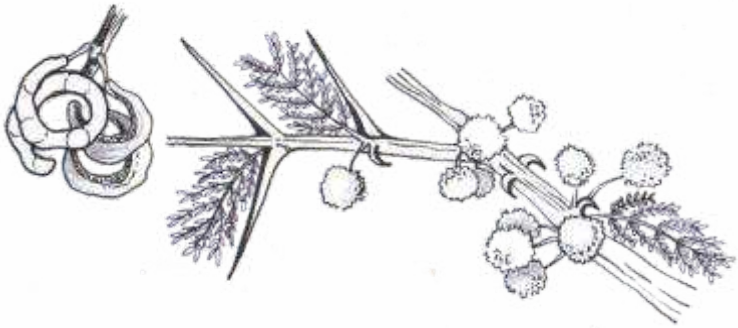
Whistling-thorn

These trees are easy to recognise because they have strange round blister-balls which grow at the bottom of thorn-pairs. These blister-balls are hollow, and many ants live inside them. They have two kinds of thorns: pairs of small, hooked ones; and pairs of long, straight white ones.
Their fruit (pods) is brown or black, and shaped like a new moon. The pods split open while they are still attached to the branch, and their seeds hang out on thin little stalks.
In the summer season, the sweet-smelling creamy-white flowers bloom before the new green leaves appear. The flowers are eaten most especially by giraffe. The pods and leaves are also eaten by giraffe, as well as other wildlife.



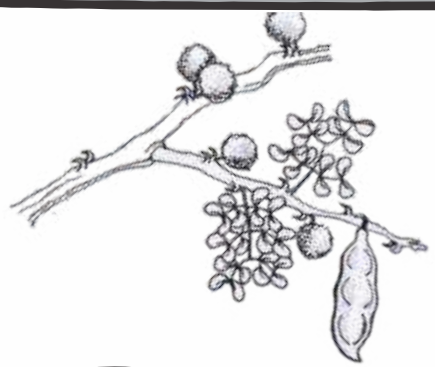


Umbrella-thorn



These trees are easy to spot, as they have the shape of an umbrella. They have two different kinds of thorns, straight ones and hooked ones. Their pods are pale brown and twisted, and often curled into rings. The pods are very rich in protein and are eaten by livestock and wild animals. The bark is made into a tea and used to treat malaria and stomach ache.

Hook-thorn



Their thorns are a pair of curved hooks, which are grey with black tips. This tree is often called the wait-a-bit thorn tree because when you get caught in their hooked thorns, it takes a lot of patience and waiting to untangle your clothes from them. Their pods are pale brown and thin, like paper. The pods, leaves and flowers are much eaten by livestock and wild animals. We use the wood for cooking and making charcoal. The leaves or bark is made into a tea and used as treatment for malaria and pneumonia.

GLOSSARY

Adapt	To change in structure, behaviour or function in order to live in a certain environment.
Alien	Plants and animals that do not occur naturally in a certain area. They have been introduced from other countries and continents.
Atmosphere	The layer of gas that surrounds Earth. The atmosphere is the air that plants and animals breathe. Air is made up of many gases, but the two most important gases are oxygen and carbon dioxide.
Canopy	In rainforests, this is where the branches and leaves of the highest trees join together to form a kind of umbrella.
Carbon dioxide	A colourless gas that is important for all life on Earth.
Cathemeral	Animals that are active during the day and at night.
Consumers	Living things that eat other living things.
Decomposers	Bacteria, fungi and other small organisms that break down the tissue of dead animals and plants. They are the final stage in a food chain.
Deforestation	The loss of trees. This is usually caused by the cutting down of trees for firewood and timber for building, or by the clearing of land to grow crops and keep livestock.
Desertification	When an already dry area that was not originally a desert is turned into one. This usually happens as a result of people's actions, such as keeping too many animals in one area for too long, which then leads to overgrazing.
Diurnal	Animals that are active during the day.
Drought	A very long period of time without rain.
Ecosystem	All the living plants and animals and the non-living things that interact with each other in a particular environment.
Endemic	Plants and animals that are only found in a particular area and nowhere else in the world.
Environment	Everything around us, which includes living, non-living and man-made things.
Evaporation	When water in rivers, dams and the ocean is heated by the sun and then turns into a gas (water vapour) in the atmosphere.
Floods	Too much water in a particular area after unusually heavy rain.
Fog	A thick mist made up of tiny drops of water.

Food chain	The order in which living things eat one another, and it is the flow of energy from one level to the next in an ecosystem.
Fossil fuels	Fuel that is obtained from non-renewable fossil matter, which has been formed over millions of years from the remains of plants and animals deep inside Earth, for example, coal, oil and natural gas.
Global warming	The increase in the world's overall temperature.
Habitat	The environment in which a plant or animal lives.
Indigenous	Plants and animals that belong naturally in a particular area.
Industrial waste	Waste that is produced by factories, warehouses and mining operations.
Nocturnal	Animals that are active during the night.
Nutrients	All the important vitamins and minerals that are necessary to keep plants, animals and people alive, healthy and strong.
Overgrazing	When too many animals eat the grass and plants in an area that does not have enough, the grass and plants cannot grow faster than they are eaten, and the land becomes dry and damaged.
Oxygen	A gas in the atmosphere that is important for respiration (breathing).
Photosynthesis	The process through which plants use water and carbon dioxide to create their own food, to grow, and to release oxygen into the atmosphere. All living things need oxygen to breathe.
Poaching	The illegal practice of hunting and killing wildlife without permission.
Pollution	Harmful and poisonous waste substances that are introduced into the environment.
Producers	Plants are producers because they make their own food. Food chains always begin with plants, the producers.
Reproduce	The process of making new life. Humans and animals give birth to babies, other creatures lay eggs in a nest or in the water, and plants grow again from the seeds they make. Life can only come from life!
Ruminant	Animals such as cattle, sheep, antelope and giraffe that after swallowing a ball of chewed grass or plant matter, bring the food up from the stomach, chew it again, and then swallow it again. They do this several times.
Territory	The specific area that an animal will defend as its own.
Water vapour	When water is evaporated by the sun, it rises into the atmosphere as a gas. This gas is called water vapour. When water vapour cools down, it changes from a gas into water droplets, which then form clouds, and then they fall to Earth as rain.

FACTS FROM THE ANIMAL KINGDOM

There are **over 9 million animals** in the animal kingdom.

Fish do not blink because they have no eyelids.

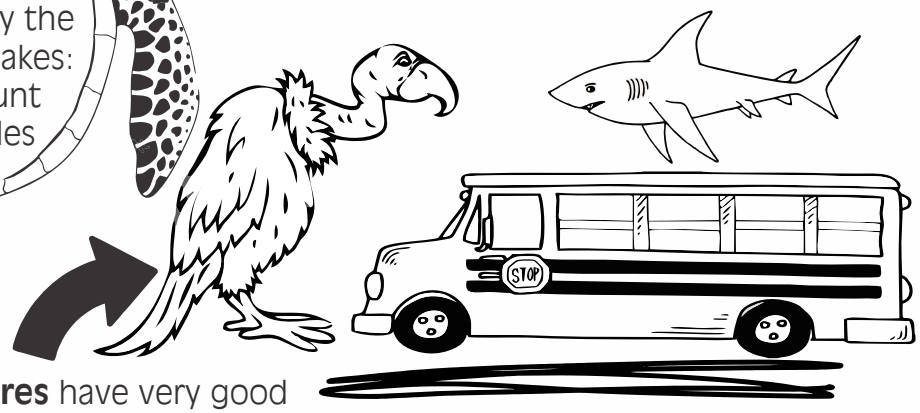
The **polar bear's** skin underneath its fur is black. The dark skin helps to soak up the sun and keep them as warm as possible.

There are no male and female **earthworms.** All earthworms have male and female parts, but it still takes two of them to reproduce.

A **chameleon's** tongue is almost as long as its body. They can shoot their tongues out and can snatch insects in a fraction of a second.

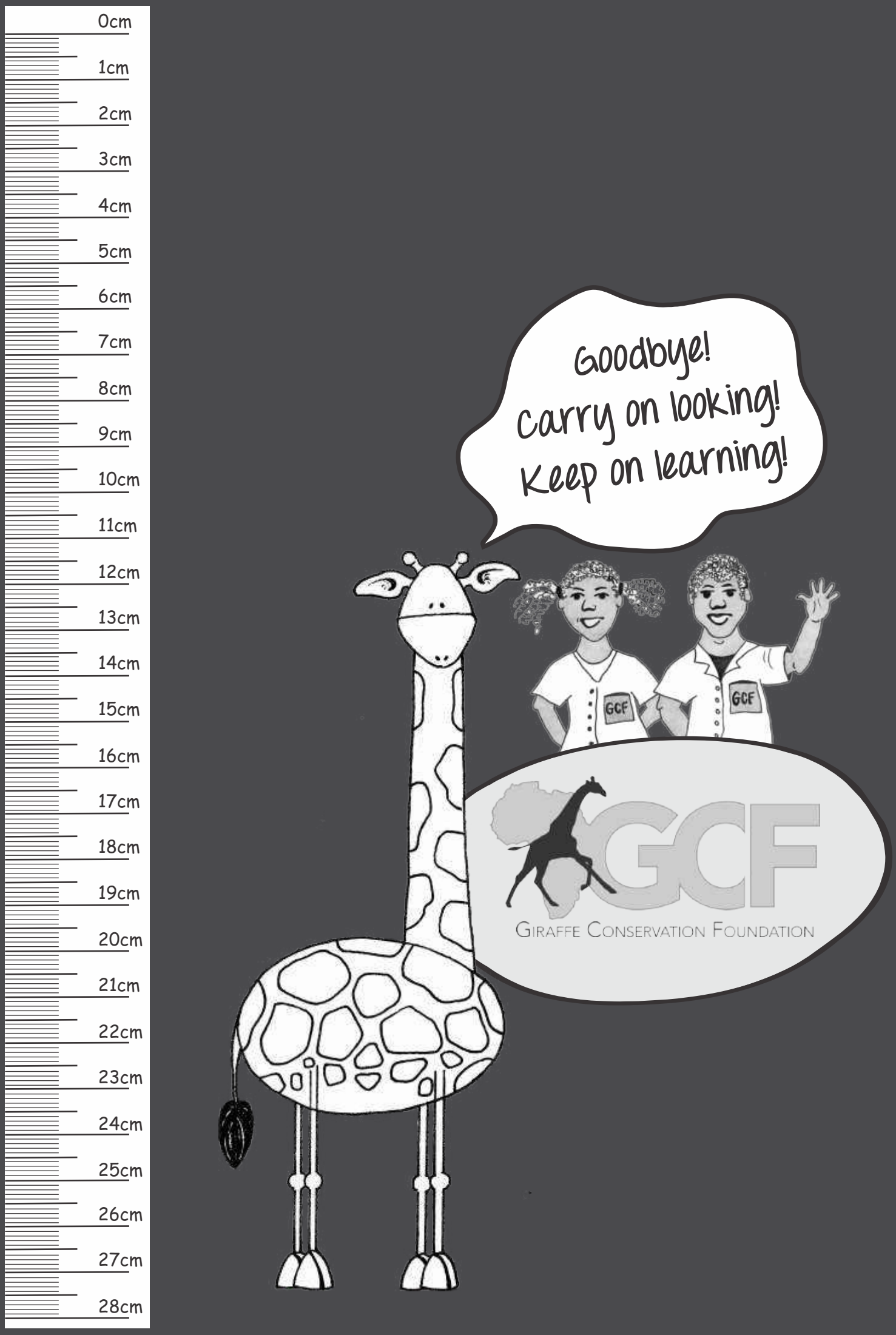
You can tell a **turtle's** gender by the noise it makes: males grunt and females hiss.

Great white sharks live throughout all the oceans in cool water close to the coast. They can grow up to 6 metres long, which is half the length of a bus!



Vultures have very good eyesight. They can see a dead animal in an open area from up to 6 kilometres away.

The wrinkles on each **gorilla's** nose is different. They are known as **'nose prints'.**


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Goodbye!
Carry on looking!
Keep on learning!
GCF
GCF
GCF
Giraffe Conservation Foundation