

## Ecosystems 1

### Food chains

Plants make their own food. They are called producers.  
Animals that eat plants are called herbivores.  
Animals that eat other animals are called carnivores

Here is a list of animals and the foods they eat:

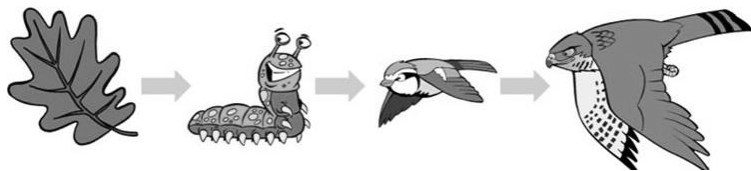
Grass  
A leaf  
An eagle  
A small bird that eats insects  
A caterpillar  
A cat  
A mouse  
A vegetable  
A cow

Write the list and next to each write "P" for producer, "H" for herbivore and "C" for carnivore.

We can show what eats what by drawing a food chain.

For example:

A LEAF → (is eaten by) A CATERPILLAR → A BIRD



Now make up different food chains using the above list of animals and their foods. Use drawings and arrows. Start all your food chains with a plant.

## Ecosystems 2

### Food chains and food webs

A food chain tells us what animal eats what.  
All food chains begin with plants.

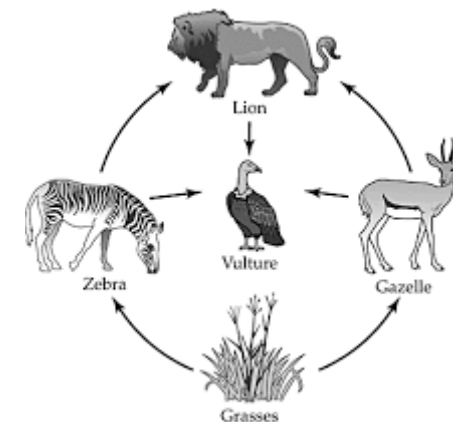
1. PLANTS get energy from the sun to make their own food. (They are the PRODUCERS)
2. HERBIVORE animals eat the plants.
3. CARNOVORE animals eat the herbivores.

But there are also OMNIVORES. They eat both plants and animals.

And last of all there are the DECOMPOSERS which are the bacteria which break down the dead plant and animal material so that it goes back to the soil.

When several animals eat the one type of food it gets complicated. This is called a food web. For example, zebra, giraffe and deer all eat grass. But lions and cheetahs both eat zebras, giraffe and deer.

Draw a diagram of a different food web.



## Ecosystems 3

### What is an ecosystem?

An ecosystem is a community of plants and animals living together in the same environment.

There are two parts to the community:

#### The non-living part:

Rain, sunlight, temperature, soil

#### The living part:

Plants, animals, bacteria

In the living part there are producers and consumers.  
The plants produce food. The animals consume food.

The living part can only survive when the non-living part provides the right conditions for survival.

If one part of the food chain gets taken away, then it affects the whole ecosystem.

1. Why would rainforest animals die if their trees were taken away?
2. Why is the non-living part of an ecosystem important?



## Ecosystems 4

### Dependence

Dependence in an ecosystem means that the living things in that environment are dependent on one another. That means that they all need one another.

Living things are also dependent on the non-living part of the environment staying the same.

This is called the balance of nature.

Changes to ecosystems can be caused by:

- Humans
- Climatic changes

What would happen if:

1. Hunters shot most of the herbivores?
2. There were too many frogs on one pond?
3. Floods, drought, oil spills, pollution, overgrazing, hunting and cutting down trees can upset the balance of nature. Chose two of these and explain how.



## Ecosystems 5

### Types of ecosystems

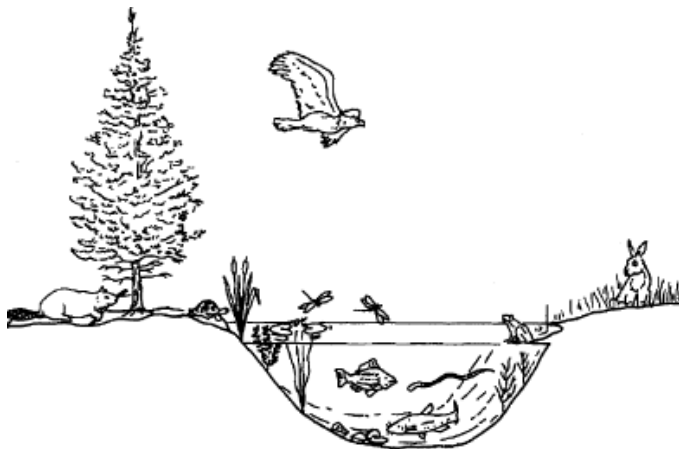
Deserts  
Oceans  
Savannah grasslands (e.g. Africa)  
Rainforests  
Lakes and ponds  
Rivers

*Choose one of the ecosystems above and write down all the living and non-living things that you will find in that ecosystem.*

*Now explain:*

- *What the animals eat*
- *Where the animals live*
- *Why they need the living and non-living things in their ecosystem*

*Now draw your ecosystem.*



## Ecosystems 6

### Climate

Climate is the usual pattern of weather for a particular place. In some places, it is hot all of the year. In some places, it is cold all of the year. In some places, it is hot in the summer and cold in the winter. Some places have lots of rain and some don't.

- Hot and wet places are called **tropical**.
- Places that are not too hot and not too cold are called **temperate**.
- Places that are very dry are called **deserts**.

The climate affects the type of ecosystem.

*Where in the world would you find:*

1. *A tropical rainforest?*
2. *A temperate climate?*
3. *A desert?*
4. *A place that is cold all year round?*



## Ecosystems 7

### Rainforest animals

Tropical rainforests grow around the equator where it is hot and rainy all year round. They are homes to millions of animals. Animals find plenty of food to eat and places of shelter among the trees.

#### Jungle hunters

The hunters are called predators. Jaguars stalk food such as deer and tapirs. Their spotted coats hide them among the trees. Then they pounce and kill their prey with a single bite. Their teeth are so sharp that they can even crack open hard turtle shells.

#### Other animals

The rainforest is also home to many insects, reptiles and birds. Large snakes such as boa constrictors kill their prey by wrapping around it and squeezing it to death. Colourful birds and monkeys feed on the fruit that grows on the forest trees.

1. Name a country where you would find jungle hunters such as the jaguar.
2. What do jaguars eat?
3. What other animals live in a tropical rainforest?



## Ecosystems 8

### The North and South Pole

It is freezing cold and windy at the poles. Ice covers large parts of the land and sea, and yet animals still live here. They have special ways of keeping warm, dry and safe.

#### Polar bears

Polar bears live in the Arctic. They hunt for seals on the sea ice. They also eat fish. To keep warm, they have thick fur and a layer of fat underneath their skin. Small bumps and long hairs on their feet help them to grip the slippery ice.

#### The Arctic fox

In summer, Arctic foxes grow a greyish-brown coat so they can hide from enemies among the rocks. In winter, they grow white coats so they can hide among the ice and snow. The Arctic fox hunts small animals like Arctic rabbits, which are also white.

#### Penguins

Penguins live in Antarctica. The females lay eggs, then go off to sea to feed on fish. The males look after the eggs, carrying the egg on their feet, covered by a flap of skin.

#### Seals

The Weddell seal lives in Antarctica. It dives underwater to feed on fish and squid.

**Whales** including Killer Whales also live in Antarctica.

1. Draw a globe and show both the Arctic circle and Antarctica.
2. Name and draw the animals that live in the Arctic.
3. Name and draw the animals that live in Antarctica. (Don't forget about the animals living in the sea.)

## Ecosystems 9

### Grasslands

Grasslands are huge plains where the climate is dry much of the year. Only tough grasses grow there and a few trees.

In Africa, huge herds of zebras, giraffes and antelopes graze on the grasslands. Elephants and giraffes eat from the trees. They have to keep a good look out for hungry predators who hunt them. These are the lions, leopards and cheetahs, (the big cats), and the wild dogs and hyenas.

Giraffes, zebra and antelope stay together and help each other look out for the hungry predators.

The adult male African elephant stands about three metres tall and weighs as much as eight cars. It is the largest land mammal. Giraffes are the tallest land mammal. They are more than five metres tall. They use their long necks to reach the leaves high up in the trees. Monkeys also eat food from the trees.

The rhinoceros is another large mammal that lives on the African plains. Hippopotamuses (hippos), live in and by the rivers and waterholes. Both of these large mammals are plant eaters.

Towards the end of the dry season the water holes start to dry up and animals are on the move looking for water. The big cats often catch animals drinking at waterholes. They also catch the slower, weaker animals running at the back of the herd.

*Make two lists: the plants eaters and the meat eaters.*

## Ecosystems 10

### The coral reef

Coral reefs are made by tiny sea creatures called coral polyps. They build hard cases around their bodies. When they die, the cases are left behind. Reefs provide plenty of food and shelter for thousands of amazing animals.

Thousands of fish live on the coral. Many, such as the butterfly fish, swim in large groups called shoals. This helps to keep them safe from enemies who find a group hard to attack. Fish of the coral reef are brightly coloured with strong patterns.

Small fish keep the reef clean. They pick dead skin and dirt off big fish like moray eels. The eels even let the small fish into their mouths to clean bits of food from their sharp teeth.

Parrot fish get their name from their sharp, beak-like teeth. During the day, they feed on the coral. During the night, they keep themselves safe by making bubbles of jelly around their body.

Giant clams are the biggest shells in the world. They can measure one metre wide. They live on the Pacific and Indian oceans.

1. *Why do fish swim together in groups?*
2. *Describe some of the fish of the coral reef.*
3. *How do they help one another?*
4. *How do you think the bubbles of jelly keep the parrot fish safe at night?*
5. *Draw an underwater scene from a coral reef.*

