

Learning about Rainforests



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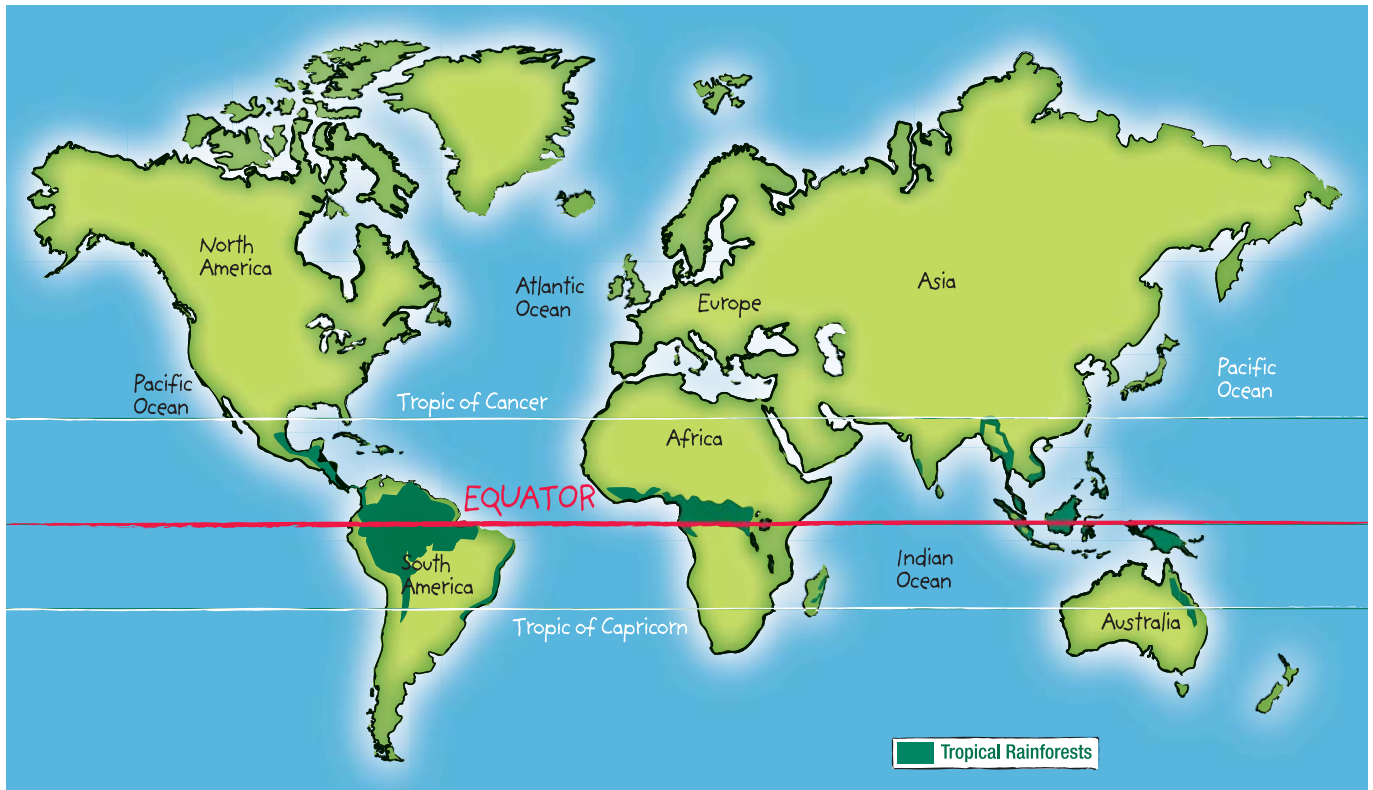
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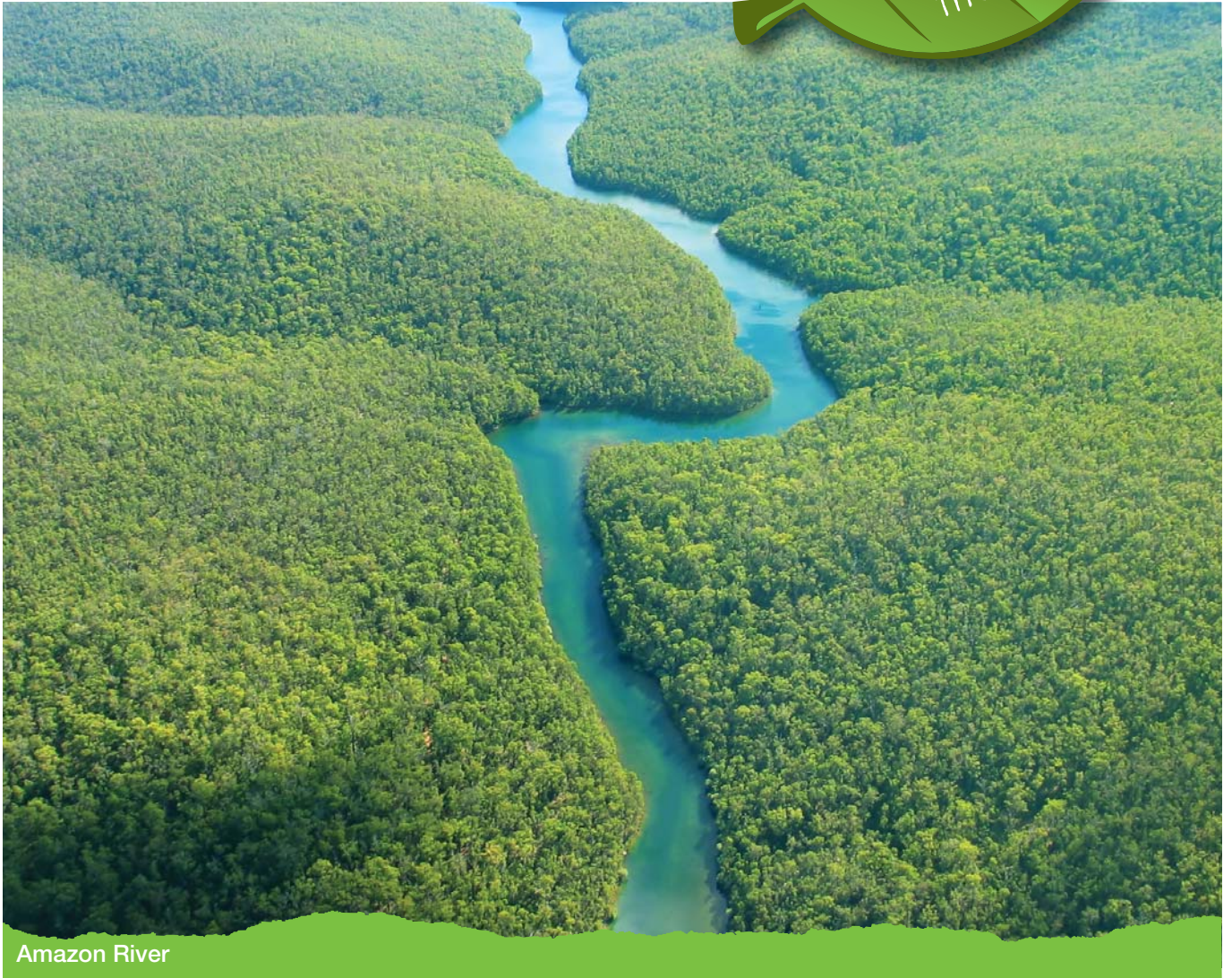
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Where are tropical rainforests found?



Tropical rainforests are found around the equator – that's an imaginary line that runs around the middle of the world.

The Amazon Basin
has the largest area
of rainforest in
the world.



Amazon River

The Amazon rainforest is the biggest rainforest in South America. It is also the largest area of rainforest in the world. Streams and rivers through the forest meet to make the largest river in the world, the Amazon River.

Please see Activity Sheet 1

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Did you know that the Brazilian wandering spider holds the Guinness World Record for being the most venomous spider? It wanders the forest floor searching for large insects and small mice and lizards to eat.

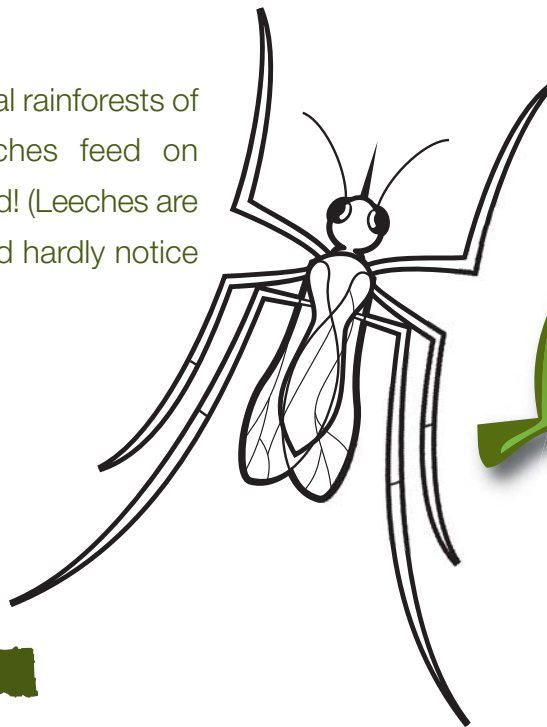
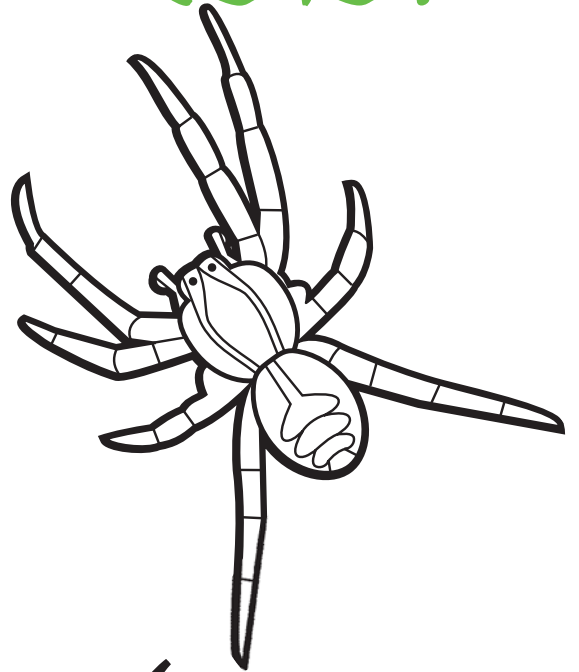
What are tropical rainforests?

Tropical rainforests are always warm and always wet! Average temperatures are between 20°C and 30°C – a really hot summer day in England is around 25°C.

It rains most days in tropical rainforests.

All this hot and wet weather makes for ideal conditions for creepy crawlies! Mosquitoes can be found in tropical rainforests all over the world. They are well known for transmitting disease such as Malaria.

Leeches are found in the tropical rainforests of South East Asia. Many leeches feed on insects, but others feed on blood! (Leeches are mostly very small, so you would hardly notice if they bit you.)



Did you know that only the female mosquito bites?!

Please see Activity Sheet 2

Rainforest types

There are different sorts of rainforest found all over the world.

Mangrove



Mangrove is a type of rainforest that grows on the edge of seas, lagoons or estuaries.

Cloud Forest



Cloud forest grows up the sides of mountains and can be hidden in clouds.

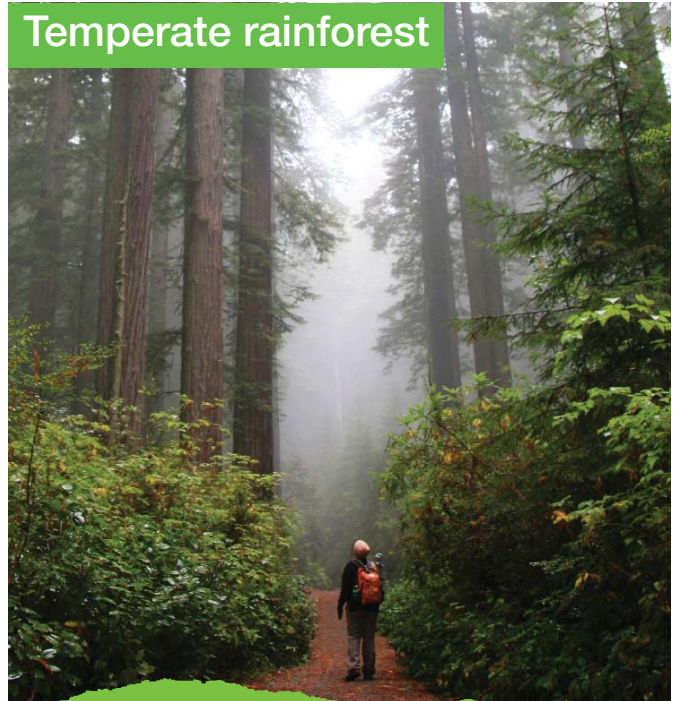
Please see Activity Sheet 3

Lowland rainforest



Lowland rainforests grow between the mountains and the coast.

Temperate rainforest

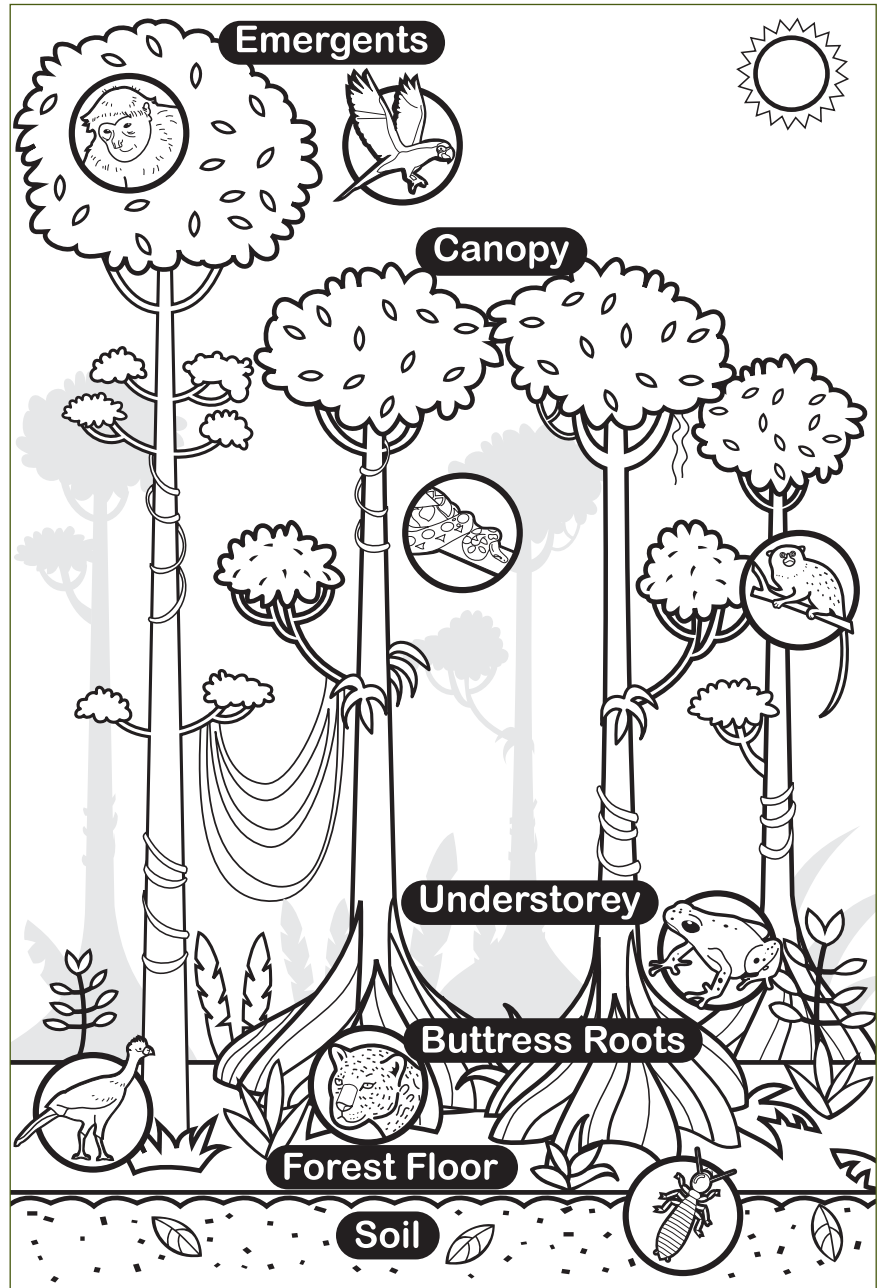
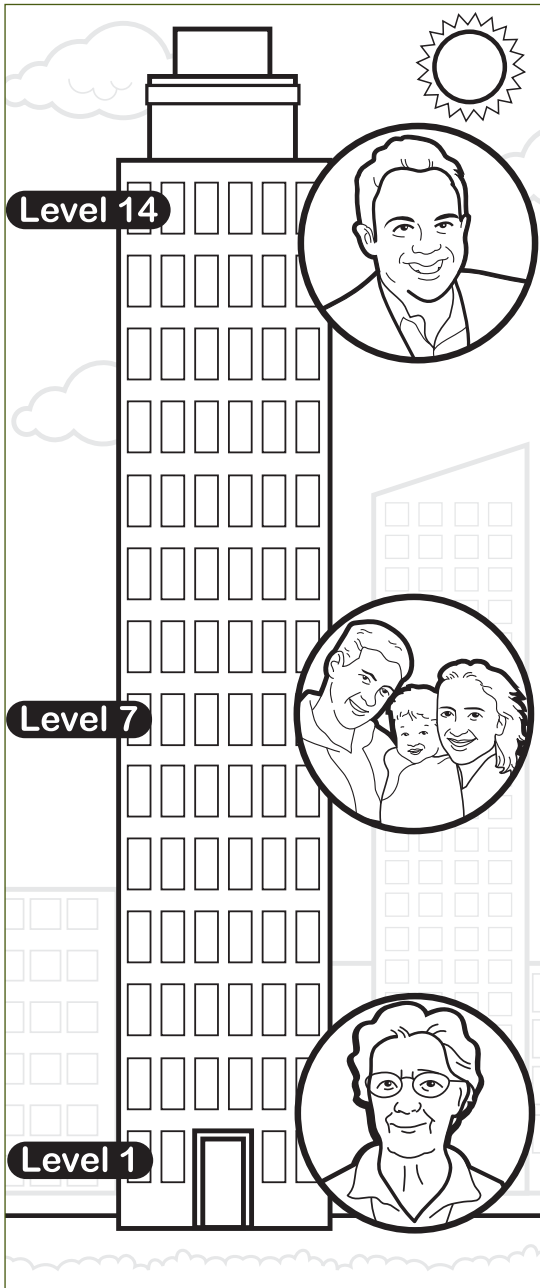


Temperate rainforests grow outside the tropics. Here the weather is a bit more seasonal this means it gets wetter and colder in winter and warmer and drier in summer.

Did you know that much of England and Wales was once covered in temperate rainforest?

Rainforest layers

Imagine a tall block of flats in a city. On the bottom floor lives an old lady who cannot climb stairs (there's no lift). At the very top lives a man who is not scared of heights and can run up and down stairs. In the middle live lots of different people. The rainforest is like this with lots of different species living at different heights of the rainforest. The different heights of the rainforest are called **layers**.



Rainforest layers

Emergents

They can grow to a whopping 70 m tall!

Here are some of the animals that can be found in this layer of the rainforest.



Woolly spider monkey (also called muriqui). The largest primate in South America. They have long tails which they use to hang on to branches as they eat leaves, fruit and flowers.



Blue-winged macaw. Noisy, colourful birds that live in the Atlantic rainforest. They eat seeds, fruit, nuts and berries.

Canopy

This is the 'roof' of the rainforest. Most of the animals and birds that live in the rainforest can be found at this layer.

Here are some of the animals that can be found in this layer of the rainforest.



Iguana. This big lizard is really good at climbing trees. If it wants to make a quick exit it just drops out of the tree! Iguanas are herbivorous (meaning they only eat plants)



Harpy eagle. The claws of this bird are longer than a grizzly bear's! They live in the canopy of rainforests in South America and fly from tree to tree hunting sloths and spider monkeys.



Pygmy marmoset. This is the smallest species of monkey in the world: its body measures about 15 cm. It is found in the Atlantic rainforest where it feeds on leaves, insects and fruit.



Boa constrictor. This snake eats small animals and birds, which it kills by wrapping its body around them and squeezing.

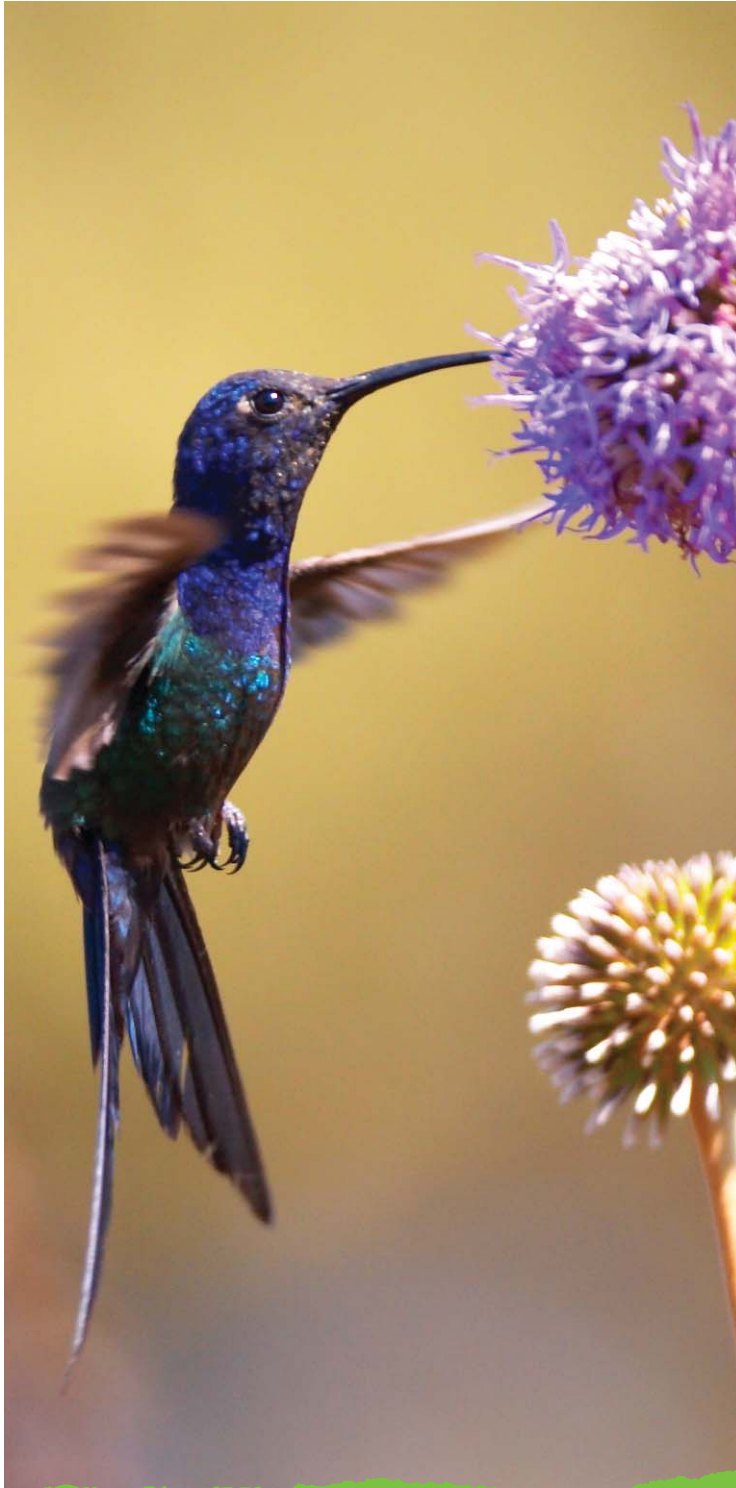


Three-toed sloth. These animals move so slowly that they have green algae and moths living on them! This helps to camouflage them and make them less tasty! They feed on leaves in the canopy of the South American rainforests.

Understorey

Smaller trees and shrubs make up this layer.

Here are some of the animals that can be found in this layer of the rainforest.



Hummingbirds. These tiny birds have long beaks and even longer tongues so that they can feed on the nectar inside flowers. Their wings can beat up to 90 times a second, this makes a humming sound.



Poison dart frog. These brightly coloured frogs produce a poison which Indians use to dip their darts in before they go hunting.



Hawkmoths. These feed on plants, leaves and flower nectar. They can be found in rainforests all over the world.

Forest floor

Here among the great big buttress roots of the rainforest trees it is dark and humid. Dead leaves, fallen fruits and nuts cover the floor.

Here are some of the animals that can be found in this layer of the rainforest.



Jaguar. This big cat is found in South America. It is a carnivore and eats more than 80 different kinds of prey, including tapir, capybara and fish.



Red-billed curassow. This large bird eats fruits, seeds and insects. It is only found in tropical rainforest in Brazil.



Jocotoco antpitta. Only discovered in 1997! It hops along the forest floor of Ecuador and eats worms, insects and millipedes.



Soil

When the leaves have rotted their goodness (nutrients) pass into the soil. Some animals, such as earthworms and termites, live in the soil and help to breakdown the fallen leaves.

Sometimes trees in the tropical rainforest may be blown down in storms. When this happens a gap, or hole, is created in the canopy. This gap lets lots of light and rain fall through to the forest floor. What happens when sunlight and rain fall on plants? That's right, they grow! Some trees may grow to fill the gap in the canopy (this could take years) but until they do, lots of smaller bushes and plants will grow on the forest floor. This means more food for big animals like elephants, in the rainforest in Borneo, and the tapir, in the rainforests of South America.



Termites. These small insects do not build big mounds in the rainforest – like they do in Africa – instead they build their nests underground. They feed on dead plants and soil. Did you know a queen termite will lay an egg every 2 seconds?

Please see Activity Sheet 4a, 4b & 4c

Forest habitat



A habitat is the natural environment in which an animal or a plant lives, where it can get everything it needs to survive. Different animals and plants can be found in different habitats, the tropical rainforest is a habitat full of different animals and birds.

All these amazing animals and plants depend on each other for food and shelter. Plants in the rainforest get their energy from the sun. Plant eating animals (called herbivores) get their energy from eating plants, meat eating animals (called carnivores) get their energy from eating other animals.

Please see Activity Sheet 5

Here are just a few examples of the wonderful wildlife that call the rainforest home.



Army ants march over the rainforest floor in thousands. They will eat almost anything that gets in their way! Some birds have learned to follow a group of army ants, as when small mammals and insects hurry out of the way of the ants, they can see them and gobble them up!



Capybaras are the largest rodent (related to mice and rats) and live in South America. They live close to rivers and have webbed toes to help them swim. They eat grass.



Okapi look like a cross between a zebra and a giraffe. They are shy animals, only discovered about 100 years ago! They eat leaves and thorny bushes in the rainforests in Africa, pulling them from trees with their long tongue. Did you know an okapi tongue is so long it can use it to clean its ears?



Tapir have long noses which they use to grab leaves or even use as a snorkel when they go swimming! They are herbivores and eat fruit, leaves and berries. Tapir are found in rainforests in Central and South America and South East Asia.

Why forests matter

Rainforests are amazing places, full of things we use everyday. Imagine that instead of going to the supermarket to do your shopping you go to the rainforest.

Rubber: found in bouncing balls, car tyres and even knicker elastic! Natural rubber comes from trees that grow in the tropical rainforest. They grow naturally in the Amazon rainforest in Brazil, but they have been planted in rainforests in Malaysia and Asia. Rubber can now be made in factories, but this process uses a lot of oil.

Bamboo: is used to make cane furniture, in Asia it is used for scaffolding, bamboo shoots can be eaten (you might have these in a Chinese takeaway). Bamboo that grows and climbs high is called rattan. Rattan can be split and used to make rope or baskets. There are different species of bamboo and it can be found all over the world.

Fruit: bananas and oranges come from the Amazon and pineapple from Venezuela.

Eggs: chickens are descended from the Asian jungle fowl, so even a simple boiled egg has its origins in the rainforest!

Medicines: the rosy periwinkle from Madagascar is used in the treatment of Leukaemia and Cancer, other medicines made from rainforest plants can be used to treat heart problems, coughs, stomach problems and eczema.

Chewing gum: used to be made from a product called chicle collected from Sapadillo trees in South America.

Brazil nuts: are eaten raw, or used as ingredients in cooking. The oil of the Brazil nut is used in shampoos and handcreams.

Chocolate: cacao pods grow on small trees from Central and South American rainforests, they contain 30 – 40 seeds, or beans. These are used to make chocolate!

Please see Activity Sheet 6

Forests in danger

Tropical rainforests are threatened. We sometimes see on TV and in the news why they are being chopped down, let us have a look at some of the reasons why.



Soy bean is grown to make cattle feed. Large areas of rainforest are cleared to grow this crop.



Farming, this is one of the main reasons people clear rainforests. So they can grow crops or grass to let their cattle graze.



Biofuels, made from palm oil, sugar cane and other crops, are another major cause of deforestation. Biofuel can be used to run car engines and can generate less pollution and green house gases than fossil fuels (petrol/coal). But, many farmers are cutting down rainforests in order to grow biofuel crops.



Logging: wood from rainforest trees can be used to make furniture and fittings, window frames, building materials, musical instruments, or burned in fires and ovens as fuel wood. Forests may also be cleared to build roads that allow access deep into the heart of the rainforest.



Dams are built to harness energy from water, from rivers and waterfalls. These great big structures often need to flood parts of the rainforest to make lakes.



'Development': as towns become bigger people need more land to build their homes on and so they cut further into the forest.

As rainforests are lost many of the things they provide will be lost too.



Mining for gold and other minerals can be very destructive of the rainforest. Mines always require roads and can cause pollution.

Please see Activity Sheet 7, 8 & 9

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Species in danger

As rainforests are cleared the habitat available to the remaining animals and birds becomes smaller and smaller. This has resulted in many species becoming endangered (this means it faces a risk of becoming extinct in the wild). Here are some examples of endangered animals from rainforests:

Orang-utan found in the rainforests of South East Asia. These intelligent primates are threatened due to habitat destruction. The rainforests where they live are being cleared to grow palm oil and other plantation crops.



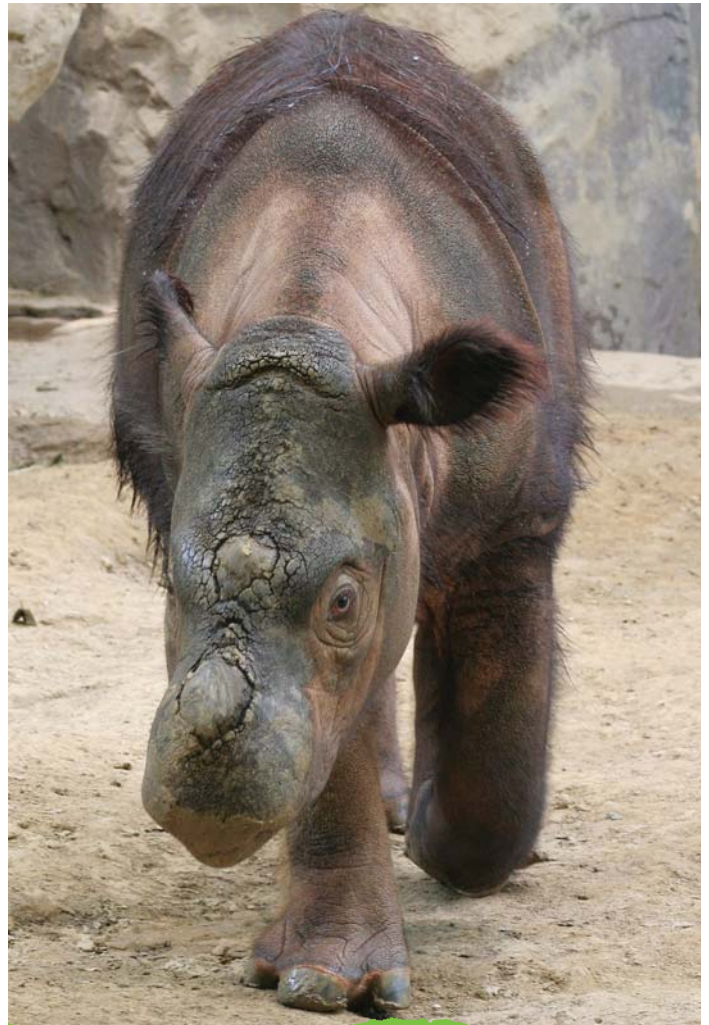
Orang-utan

Sumatran rhino is the smallest rhino in the world from South East Asia. It is threatened because of habitat destruction and is hunted for its horn.

Aye aye is actually a primate – although scientists used to think it was a rodent (like mice and rats!) It is found only in Madagascar. It is threatened by habitat destruction, as forests are cleared to make way for agriculture and development.



Aye aye



Sumatran rhino

Species that have already become extinct because they have lost their natural habitat include:

Alagoas curassow (bird) from Brazil. Extinct because of forest clearance to grow sugarcane, and hunting.

Golden toad of Costa Rica, not seen since 1989.

Socorro Dove (bird) from Mexico, due to introduced predators (cats) and habitat loss.



Golden toad

Please see Activity Sheet 10

Saving rainforests —what you can do

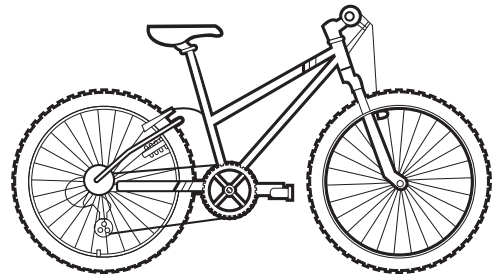
3 ideas to
help save the
rainforest

Here are 3 ideas for how you could do your bit to help save the rainforests;

1. Try not to buy anything with palm oil in it (read the labels of chocolates/dried fruit/shampoos and ice cream). Ingredients listed as 'vegetable oil' or 'saturated oil' are usually palm oil.



2. Walk to school, or cycle. Talk to your parents and discuss whether the whole family could start cutting down how much you use your car.



3. Use the internet to learn more about some of the issues we have discussed here, and some other environmental impacts that we haven't had time to discuss; like light pollution.



Please see Activity Sheet 11

Saving rainforests

These are just a few of the ways that rainforests are being protected.

The World Land Trust is a charity that raises money to protect threatened habitats overseas. By working with conservation organisations in Mexico, Ecuador, Brazil, Paraguay, Belize, India and the Philippines, The World Land Trust helps to buy areas of rainforest. These areas are then protected, managed, reforested and patrolled by rangers.



Tourists visit rainforests as part of their holidays. They love to see the tall trees, amazing animals and wonderful plants of the rainforests and pay for guides to take them through the forest. Their visits help to show governments and people living there that rainforests can help make money if they are left alone.



Governments can stop people logging, and set aside land as protected areas and nature reserves.

There are international laws to protect endangered wildlife. This means that it is illegal to catch and sell some of the animals, birds and plants from the rainforest.

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