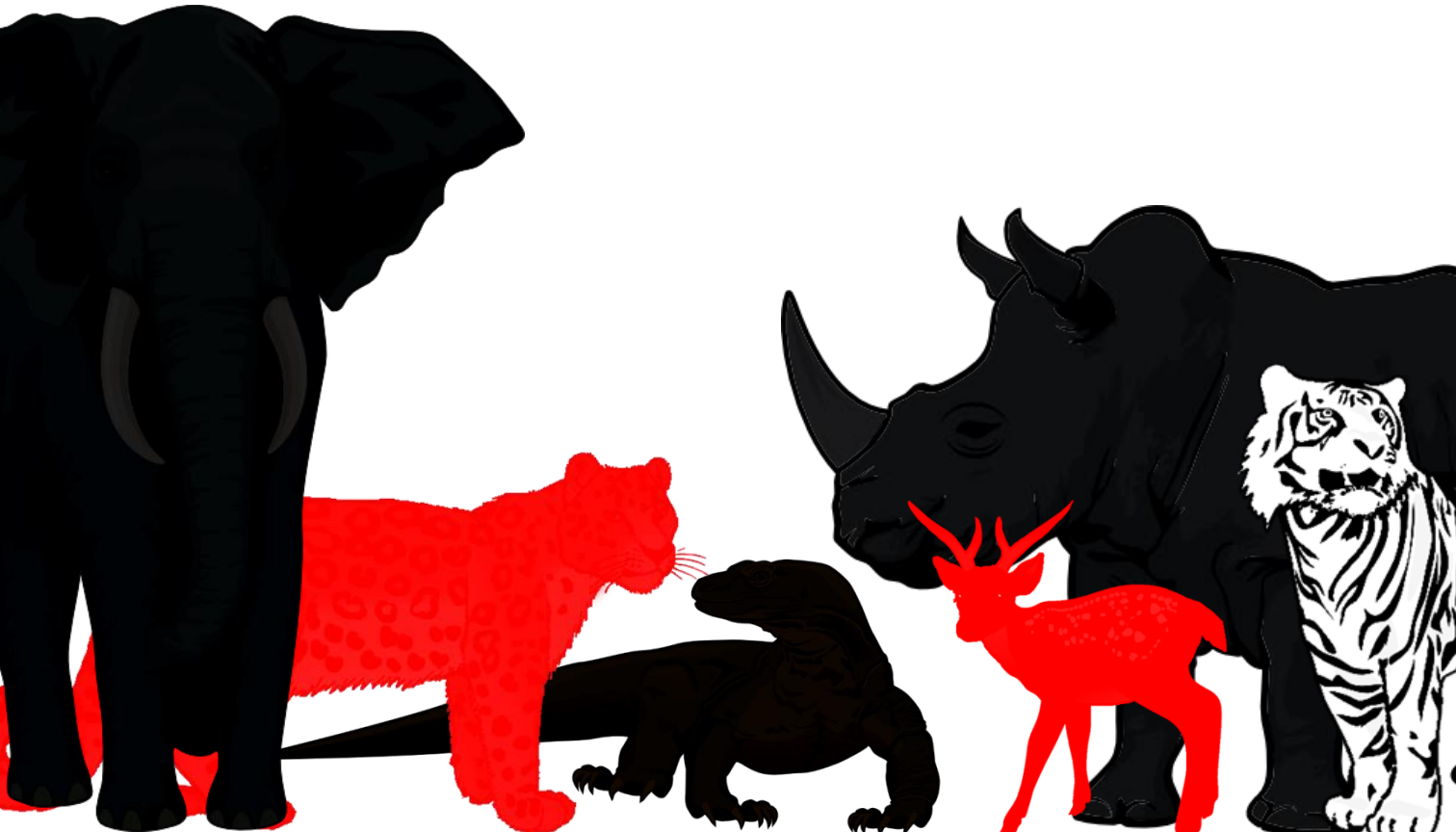
Activity Pack: Endangered Animals

KS1 & KS2

This pack is designed to provide teachers with information to help you lead a trip to Colchester Zoo focusing on Endangered Animals



How to Use this Pack:

This Endangered Animal Tour Guide pack was designed to help your students learn about endangered animals and prepare for a trip to Colchester Zoo.

The pack starts with a few pages of background information for teachers outlining the classification of endangered animals, major problems facing endangered animals, and what zoos are doing to help endangered animals.

The pack continues with suggested endangered animals to visit at Colchester Zoo, including a map of where to see them and which encounters/feeds to attend. The next section contains fact sheets about these animals. This includes general information about the type of animal (e.g. what's its status, what threats does it face, etc.) and specific information about individuals at Colchester Zoo (e.g. their names, how to tell them apart, etc.). This information will help you plan your day, and your route around the zoo to see a variety of endangered animals. We recommend all teachers read through this and give copies to adult helpers attending your school trip.

The rest of the pack is broken into: pre-trip, at the zoo and post-trip. Each of these sections starts with ideas to help teachers think of ways to relate endangered animals to other topics. Then there are a variety of pre-made activities and worksheets. Activities are typically hands on 'games' that introduce and reinforce concepts. Worksheets are typically paper hand-outs teachers can photocopy and have pupils complete independently. Teachers can pick and choose which they want to use since all the activities/worksheets can be used independently (you can just use one worksheet if you wish; you don't need to complete the others).

The activities and worksheets included in this pack are for a range of ages in KS1 and KS2. Feel free to use the activities and worksheets for students of all ages.

We suggest using the pre-trip activities/worksheets prior to your trip to familiarise your pupils with vocabulary, context, and the animals they will see. The at the zoo activities/worksheets typically require information your pupils can gather while they are at Colchester Zoo and are designed for completion during your school trip. The post-trip activities/worksheets are designed to be used after your visit to build on information gathered during your school trip. Within these sections, the activities/worksheets can be used in any order.

If you would like any more guidance, or have any questions about any of the information contained within this pack, please contact our education department at education@colchesterzoo.org

Contents

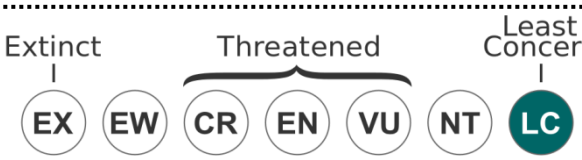
Endangered Animal Classification:

In 1964, the International Union for the Conservation of Nature (IUCN) created the Red List of Threatened Species (IUCN Red List or Red Data List). Various countries have their own lists, however the IUCN list is the main classification of endangered species on a global level.

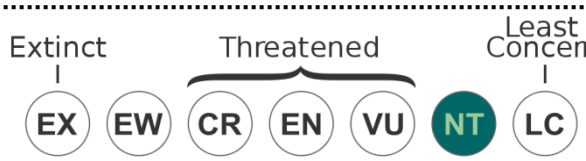
The red list is created by various scientists and specialist organisations from around the world. Organisms (plants, animals, fungi, etc.) are assessed based on a number of criteria including: rate of decline, population size, are of geographic distribution, degree of population fragmentation and current risks. Based on assessment, organisms are assigned to one of the red-list categories. The list is regularly reviewed and species can move up (become more endangered) or down the list (no longer threatened) based on new data

Many people refer to all 'threatened category' animals as endangered.

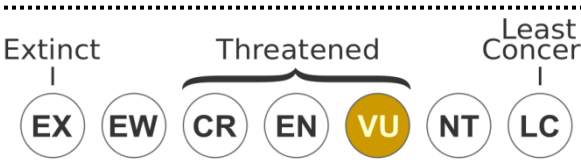
Not Evaluated (NE) - Not yet been evaluated against the criteria
Data Deficient (DD) - Inadequate information to make an assessment



Least Concern (LC) - Lowest risk. Widespread and abundant taxa are in this category.

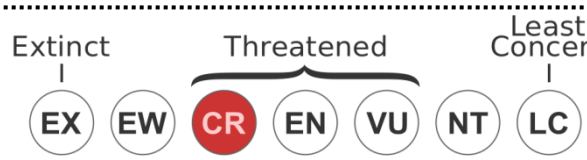


Near Threatened (NT) - Low risk. Likely to qualify for a threatened category soon.



Vulnerable (VU) - Threatened. Considered to be facing a high risk of extinction in the wild.

Endangered (EN) - Threatened. Considered to be facing a very high risk of extinction in the wild.



Critically Endangered (EN) - Threatened. Facing an extremely high risk of extinction in the wild.

Extinct in the Wild (EW) - Only survives in captivity.

Extinct (EX) - The last individual of the population has died. The species is no longer alive anywhere.

Background Information — Causes

Why animals become endangered is important to understand, especially since humans are a major cause. Collectively, the threats to animals are 'the HIPPO dilemma' (which has nothing to do with hippos the animals). Hippo is an acronym which stands for:

- **H**abitat Loss (Destruction and Fragmentation)
- **I**nvasive Species
- **P**ollution
- **P**oaching
- **O**veruse

Habitat Loss (Destruction and Fragmentation)
The destruction of habitats is one of the most serious threats to wildlife across the world, and many habitats are affected. Habitat loss happens when humans convert the habitat into a different land use. With this new use, the animals have nowhere to live. Some of the reasons habitat is lost include: houses (space to build homes and cities), roads, tourist resorts, farming, mining, factories, grazing pastures, and timber industries.

Commercial and illegal logging as well as forest clearing for agriculture are the top reasons for habitat loss worldwide, especially problematic with rainforest animals.

Invasive Species (Alien Species, Introduced Species)
In their natural habitat, every animal has a specific role (a niche). The natural ecosystem always stays in balance, populations of specific animals or plants might change but will return to a natural balance. However, when animals or plants that do not belong in the habitat are introduced into the environment they can disturb this balance.

Animals are sometimes moved on purpose, or sometimes accidentally transported. For example: foxes and cats have been introduced around the world and cause the decline in many species of birds and small mammals. Rats have been introduced to most of the world, and will eat almost anything. Rats cause a lot of problems on islands, especially islands with ground nesting birds, as they eat the chicks and eggs. The 10 worst invasive in the world are: kudzu vine, black rat, Asian tiger mosquito, cotton whitefly, snakehead fish, Asian longhorn beetle, cane toad, European rabbit, and Nile perch.

Background Information — Causes

Pollution
Pollution is anything that doesn't belong in the natural environment. Physical and chemical pollution can damage the quality of water, air and soil. One type of pollution is chemicals to control insects and plants (herbicides, pesticides and fertilisers). These can directly poison animals, and can cause food chain to collapse.

Litter is another type of pollution. Some litter (food products) can biodegrade relatively quickly and return to things found in nature. Other types of litter, such as plastic, do not biodegrade. Plastic is inert, and if dropped somewhere, will stay there for hundreds or even thousands of years. Without a way to remove plastic, it accumulates in rivers and flows to the sea. All the oceans of the world now have giant patches of floating plastic rubbish mainly caused by people dropping it on land.

Air pollution is a major cause of problems for humans and animals Chemicals in the air make it hard for animals to breath.

Noise and light pollution are also a major course of death in birds, who fly into lit windows and the noise from boats and sonar confuses whales and results in them getting beached.

Poaching
Poaching is simply illegal hunting. Hunting of endangered animals is illegal in many countries. However, because there is a lot of money in the illegal wildlife trade, people still hunt these animals. This includes hunting for fur, horns, ivory, medicine, etc.

Overuse (Over exploitation)
Overuse is when too much is taken from the natural environment. This includes over-fishing, over-grazing, over-logging, harvesting coral, harvesting plants, taking guano, capturing animals for pets, etc. This is unstainable, especially if the species reproduces slowly.

Background Information — Zoos

Historically, zoos were simply places to display animals, but in the past 50 years zoos have changes their goals and purposes. Good zoos are accredited and are members of organisations such as BIAZA (British and Irish Association of Zoos and Aquaria), which is in turn a member of EAZA (European Association of Zoos and Aquaria), which is in turn a member of WAZA (World Association of Zoos and Aquaria). These organisations ensure that zoos look after their animals, and work towards the same four main goals: conservation, education, research and recreation.

Conservation
Zoos are directly involved in conservation through research, captive breeding and re-introduction programmes. Zoos are indirectly involved in conservation through supporting in-situ projects, and participating in training or education.

Colchester Zoo has donated money to conservation projects worldwide. Funding is provided via Colchester Zoo's charity Action for the Wild. Action for the Wild was formed in 1993 and achieved charitable status in 2004.
(See our website Information Packs section to read more details in our Conservation Pack).

Education
Most zoos have an education programme for school groups and various interpretation boards or interactive displays around the enclosures. This sort of information sparks interest, which leads to respect - if people respect animals they are less likely to abuse them or buy endangered animal products, and are more likely to support conservation efforts, reduce pollution etc.

Research
Research is ongoing in zoos in areas such as enclosure enrichment, veterinary care, reproductive behaviour and nutrition. This knowledge benefits the captive animals and their wild counterparts. There are many specific techniques that have been perfected in zoos and then applied to wild populations. These include: in vitro fertilisation, freezing eggs and sperm, artificial insemination, embryo sexing, cross fostering, embryo transfer, artificial and surrogate incubation and contraception. Drug dosages, disease diagnosis, individual identification and monitoring devices, such as radio collars, are other techniques developed in zoos and applied to the conservation efforts for wild populations.

Recreation
Zoos need people to visit them and enjoy the visit. These visitors provide valuable money which are how zoos run and how zoos have funding for their other goals (Conservation, Education, and Research). Additionally, by being places that are fun, visitors enjoy themselves. They might learn about the animals, but equally important, they get the chance to see the animals up close and make a connection with them. By offering people this close up experience, zoos hope to generate awe and wonder in their visitors and in doing so, hope to make their visitors care about animals.


Map Keys
First Aid
Information
Gift Shop
Picnic Area
Play Area
Toilets
Fire Assembly Point
Face Painting
Endangered Animals to See at Colchester Zoo:
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7
8
Kids' Safari
Download a more detailed map from our website:
www.colchesterzoo.org

Endangered Animals to See:

1. Worlds Apart: visit the **Golden Lion Tamarins,** at the exit continue towards the orangutans and stop at Penguin Shores or Inca Trail to see the **Humboldt penguins.**

2. Orangutan Forest: see the **orangutans.**

3. The **sun bear** enclosure at the top and down the steep hill to the **Amur leopard.**

4. Elephant Kingdom: **African Elephants**, across the path at Kingdom of the Wild: **White Rhinos.**

5. Edge of Africa: at the very bottom of the zoo, visit the **cheetahs.**

6. Inside the giraffe building, at the very back and bottom are the **pygmy hippopotamus.**

7. Visit our two **Amur tigers** and continue further along to path to the **Visayan spotted deer** and **Visayan warty pigs.**

8. See the **Komodo dragons,** and directly across the path from them, the **African hunting dogs.** Turn down the hill at Wilds of Asia to visit the **red pandas.**

Feeds and Talks to Attend:

Penguin Encounter (1 on the Endangered Animals to see map) watch the penguins being fed.

Orangutan Encounter (2 on map) watch the orangutans being fed by the keepers. A great time to see them climbing to the roof of their enclosure!

Sun Bear Encounter (3 on map) this is the best time to see these enduring animals moving around instead of sleeping - check the clock by their enclosure for times!

Elephant Feed (4 on map) at 12.30 and 14.30. You can hand feed the elephants. This is free of charge, but you do need to queue. Sometimes the queues are long.

Amur leopard Encounter (3 on map) a keeper will explain all about these endangered big cats, and you might get the chance to see training or them eating.

Komodo Dragon Encounter (8 on map) the reptile keepers will tell you all about the enormous animals, and might even be training them.

Visit www.colchesterzoo.org to see the 'Daily Timetable' for a full list of all talks, feeds, and shows and their times

Please note that times of feeds may change without notice.
Visit the website and ask at entrance for an up to date schedule .

Ceratotherium simum

White Rhinoceros

Habitat: Savannah
Distribution: South and northeast Africa
Diet: Grazes on grasses and other vegetation
Longevity: 45 years in the wild, longer in captivity
Estimate number in wild: ~20,000
Status: Near Threatened

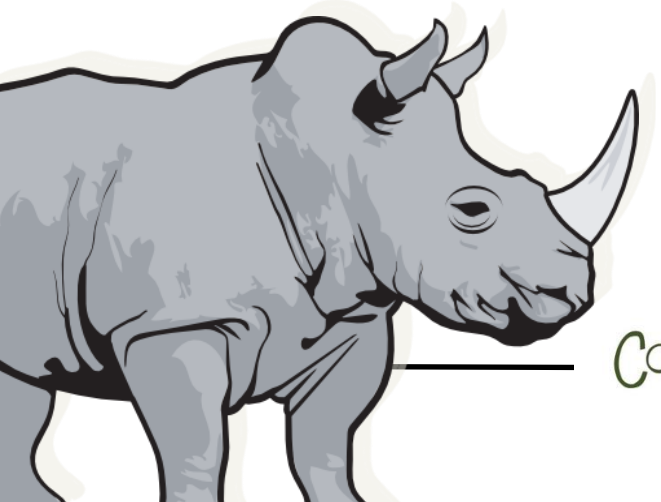
There are five species of rhino: white rhino, Indian rhino, black rhino, Sumatran rhino, and Javan rhino. Indian rhinos are vulnerable. Black, Sumatran, and Javan are all listed as critically endangered. The northern subspecies of white rhino is listed as extinct in the wild. Southern white rhinos are the least endangered.

Southern white rhinos are considered near threatened. They have experienced escalating poaching in recent years due to increase demand in the illegal trade of rhino horn. As other rhino species numbers decrease, more poaching effort is focusing on the white rhino. It is predicted, that once other species are extinct, the rate of poaching white rhino will increase dramatically and their population will quickly decline.

Current protection efforts have helped limit poaching. Without strong conservation measures, within five years white rhinos will meet the criteria to be listed as endangered if poaching levels continue at the current rates. If poaching increases, this will happen a lot faster.

Rhino poaching is primarily for their horns. Rhino horns are made of keratin fibres. Keratin is the same material in human hair and fingernails. The horns are seen as a sign of wealth and sometimes used to make trinkets and dagger handles. However, the most common use for rhino horn is in traditional medicine. Scientific evidence has proven there is no medicinal benefit to rhino horn. However, many people believe it can cure a wide range of illnesses, including flu and cancer, so they are will to spend a lot of money to acquire it illegally.

Colchester Zoo's rhinos are part of an international breeding programme and there have been four calves born since 2009.



Loxodonta africana

African Bush Elephant

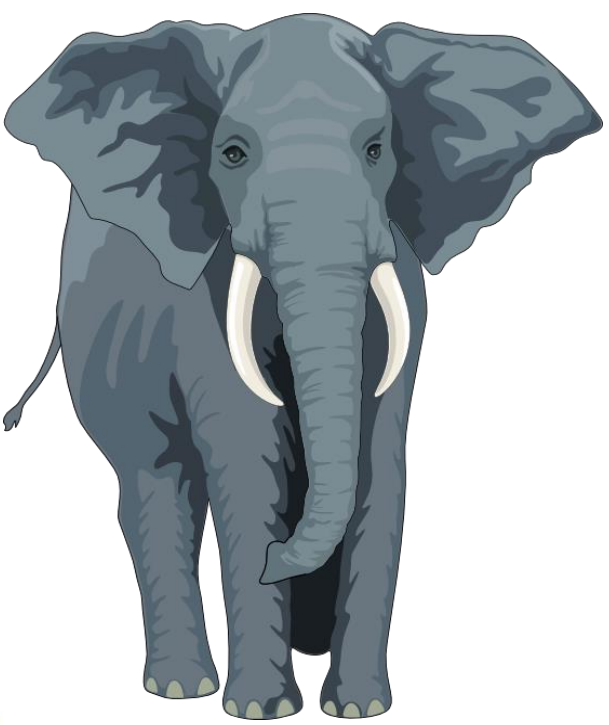
Habitat: Savannahs bush elephant
Distribution: Africa south of the Sahara, mainly in reserves
Diet: Grass, leaves, woody plants, shrubs, bark, flowers and fruits.
Longevity: Up to 60 years, longer in captivity
Estimate number in wild: ~470,000-690,0000
Status: Vulnerable

Elephants are the largest land mammal on Earth. They weigh up to 6 metric tons, are up to 7.5m long and over 3m high. Males are larger than females. Their tusks are made of ivory and are modified front teeth. Elephants use their tusks to dig in the ground, knock bark off trees, and scare away predators. An elephant's trunk is a modified nose and upper lip. Elephants use their trunks for many purposes including drinking, squirting water, picking things up, breathing, and making noise (trumpeting). Because the trunk is their nose, they do not have any bones or teeth in it, but it does have 40,000 muscles!

Elephants live in complex social herds. Females form groups of closely related individuals led by the dominant female, called the matriarch. Males are sometimes solitary, or form groups with other males. Living in groups helps the elephants avoid predators. The only predator of adult elephants is humans, but baby elephants may be hunted by other predators, such as lions.

Elephants are vulnerable, with very few living outside of protected areas. One of the major threats elephants face is poaching and hunting for the ivory trade. Humans kill elephants and carve the tusks into statues, bracelets, and other souvenirs and trinkets.

Colchester Zoo has four African bush elephants, Tembo, Zola, Tanya, and Opal. Tembo is the male and the largest, he lives in the back paddock (visible from the farm section of the Zoo). Zola is often in the back paddock with Tembo and can be identified because she has the longest tail hair. Tanya and Opal are in the front paddock and the elephants that participate in the public feeds. Tanya is the matriarch of the herd and has smooth outer edges to her ears. Opal has notches in her ears. All of the elephants were born in the early1980's.



Acinonyx jubatus

Cheetah

Habitat: Savannah
Distribution: Southern and eastern Africa, Middle East
Diet: Hooved mammals, hares, rodents and other small animals
Longevity: 12 years in the wild, up to 17 in captivity
Estimate number in wild: ~Less than 7,500
Status: Vulnerable

The Cheetah is easily distinguished from other spotted cats by their skinny body, small head and exceptionally long tail and legs. They can weigh up to 60kg and stand between 60 and 80cm tall. On their face they have highly characteristic lines running from the corner of their eyes to their mouth, the rest of their coat is spotted.

Cheetahs have a unique way of catching their prey. Rather than stalking up close, Cheetahs will stalk a herd to within 30 metres or so, panic them, then sprint after one animal. From a standing start they can reach their top speed of 95km/h in about 3 seconds! They have highly flexible spines which can bend and flex allowing them to take long and rapid strides. Their claws help with traction since they are none retractable, whereas other cats can retract their claws. When they are close the cheetahs flick their front feet to knock the prey off balance and cause it to fall. If they do not manage to catch their prey fairly quickly they will give up, as running uses a lot of energy.

In the 1970's, cheetah populations were estimated at 15,000. Now there are only 7,500 known, and it's unlikely that there are more than 10,000 in the wild. Their population has declined at least 30% in the last 30 years. This decline is primarily because of habitat loss as well as killing cheetahs out of fear they prey on livestock and hunting for fur.

Colchester Zoo has successfully bred cheetahs in the past and it is hoped our current cheetahs will also breed in the future.

Lycaon pictus

African Hunting Dogs

Habitat: Dry woodland and savannah
Distribution: Isolated populations across Sub-Saharan Africa
Diet: Carnivore including antelope, impala and other available prey
Longevity: Approximately 10 years in the wild, longer in captivity.
Estimate number in wild: ~6,000
Status: Endangered

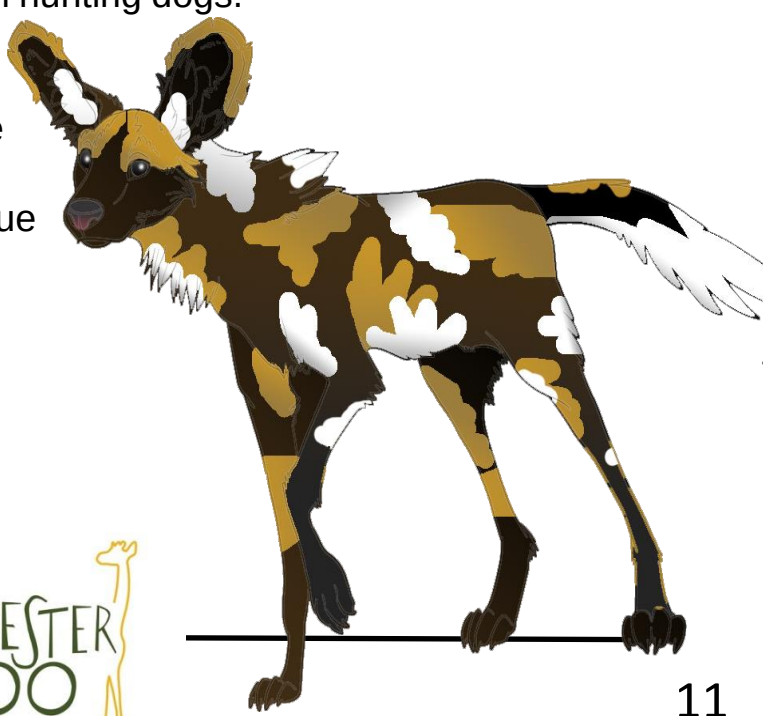
The African hunting dog has many different names including: African painted dog, and spotted dog. Every dog has a unique pattern, but they all have a tan forehead, black muzzle, and white tip to their tail. Their white tail helps them to keep track of others in their pack. Their large ears also make them good at hearing out for prey and danger.

Hunting dog packs used to contain as many as 100 dogs. However, because they're endangered, most packs have around 10 individuals. The females lead the groups. The dominant pair breed, and all members care for the young.

They are remarkably successful when hunting as a group. A large pack can bring down prey as large as an elephant! Lions (often seen as the top predator of Africa), are only successful on hunts approximately 2 times out of every 10 hunts. In comparison, African hunting dogs are successful approximately 8 times out of every 10 hunts.

There used to be over 500,000 hunting dogs. Now, there are fewer than 5,000 hunting dogs left. It's biggest threats are habitat loss (since it requires large areas to hunt in) and poaching.

Colchester Zoo has a pack of four African hunting dogs. Three are brothers born in Sweden in 2012-2013 and are named Jakob, Thomas and Thadeus. There is also one female, Ayanda who was born in 2012 in the Netherlands. They each have unique markings so if you look closely, you can tell them apart.



Pygmy Hippopotamus

Habitat: **T**ropical rainforest and swamps
Rainforest Layer: Understory
Distribution: Western Africa
Diet: Leaves, shoots, roots and fruit
Longevity: 35 years in the wild, up to 42 in captivity
Estimate number in wild: ~ Less than 2,500
Status: Endangered

The Pygmy hippo is much smaller than the common hippopotamus. It is only a metre tall at the shoulder and weighs just 272 kg. Young are about the size of a housecat. They have smooth, almost hairless skin that is brown-black. They secrete a white substance from their pores which acts as a moisturiser. Pygmy hippos do not have webbed toes (like the larger hippos) because they spend more time on land. When threatened, they retreat into forest cover than the water.

Despite their small size, pygmy hippos can be aggressive when threated or defending their territory. They are not social animals, preferring to live alone or in pairs, avoiding other hippos. Pygmy hippos have large territories, males cover 160 hectares, females 40—60 hectares. They have several resting places which they exclusively use for sleeping. They are nocturnal, usually active between 6pm and midnight when they wander around the forest floor in search of fallen fruit and other food.

Because pygmy hippos have such large ranges, they are severely effected by deforestation. They are also endangered due to hunting for food and hunted for their teeth. They are hard to study in the wild, but estimates suggest there are fewer than 3,000 left in the wild.

Colchester Zoo has two adult pygmy hippos; a male called Freddy and a female called Venus. They are part of an international breeding programme and have had several young over the years. When the young grow up, they move to other zoos around the world to aid with the progression of the breeding programme.

Ailurus fulgens

Red Panda

Habitat: Temperate (woodland) forests
Distribution: Himalayas, Burma, Sichuan and Yunnan
Diet: Mainly bamboo but also small mammals, birds, eggs, blossoms, berries, and fruit
Longevity: 14 years in the wild,
Estimate number in wild: ~less than 15,000
Status: Endangered

Red pandas look like a cross between a racoon and a giant panda with fluffy fur, a striped bushy tail and a white 'panda' face. They are a lot smaller than giant pandas, only up to 60cm long and weighing just 3-5kg. They are not true bears, but scientists still don't know if they're more closely related to racoons, or bears, or something else!
Red pandas are nocturnal, mainly active at dawn and dusk, spending most of the day resting in the trees. They are well adapted to life in the trees. The pads of their feet are covered in hair to prevent them slipping and they can jump up to 1.5m from branch to branch. They feet can also turn backwards, this is useful because it means they can climb down trees head first! They are territorial, marking the boundaries with scent, using urine and substances secreted from their foot pads. Local names for the Red Panda include 'Wha' and 'Chitwa' due to their twittering call used for communication.

Red pandas are threatened by habitat loss, habitat fragmentation and poaching for fur. The biggest threat is the increasing human population within the species range. As the local human population grows there is increased pressure for land to use for housing and farming and pressure to chop down the forests for firewood.

Colchester Zoo has two red pandas. Our adult male is named An An, and the adult female is called Liwei. They have had cubs in the past, and we hope they do in the future. When the cubs grow up, they have all moved to other zoos, since in the wild they would not stay with their parents.

Spheniscus humboldti

Humboldt Penguin

Habitat: warm coastal waters and sandy/scrubby shorelines
Distribution: Peru, Chiles and islands off the west of South America
Diet: Crustaceans, krill, squid, and fish
Longevity: 30 years
Estimate number in wild: ~2,500-10,000
Status: Vulnerable

Humboldt penguins are a medium sized penguin, about 65cm tall and weight about 4.2kg.The feathers are black on the upper parts, light on the lower section and have a black stripe across their chest. Like all penguins they are flightless, since their wings have lost the flexibility at the elbows and become more like flippers. These 'flippers' allow them to swim up to 25 kph 'flying' underwater, essential for catching fish and escaping predators. The Humboldt penguins live in a warmer climate than most other penguins but they retain the layer of insulating fat to protect them from the cold when swimming. This gives them problems when trying to keep cool on a warm day. Humboldt penguins do however have shorter plumage than other penguin species.

Humboldt penguins excavate burrows to nest in, usually about 3 metres in length. At the end is a small chamber which they line with sticks, mosses and lichen. Incubation of the two eggs shared between both sexes, they often pair for life and stay with their mate.

The primary threats for this species is accidental capture in fishing nets (resulting in drowning), illegal hunting for food and illegal capture for the pet trade. Historically, populations declined due to over-exploitation of guano (which the penguins require for their nests). It is still harvested in some parts of their range, but no longer a major threat.

There are lots of Humboldt penguins at Colchester Zoo living in two separate breeding colonies. At Penguin Shores get an underwater view of them swimming, or at Inca Trail view the penguins from above. The penguins all have unique markings of black spots on their bellies. Look for the signs at the enclosures and see if you can identify the names of all the penguins!

Varanus komodoensis

Komodo Dragon

Habitat: Dry grasslands, savannahs and (monsoon) rainforests
Distribution: Indonesian islands of Komodo, Rinca, Gili Motang, Gili Dasami and Flores.
Diet: Deer, wild boar, and snakes, will also eat fish and smaller Komodo dragons
Longevity: Up to 50 years in the wild, presumed longer in captivity
Estimate number in wild: ~4,000
Status: Vulnerable

Komodo dragons are the world's largest, land-living lizard and can reach lengths of almost 3m. They are a member of the monitor lizard family. Their tail is longer than their body. They have a long, thick neck and flattened body with short legs and sharp claws on the end of their toes. The adults vary in colour from dark red through to grey black.

Komodo dragons use their long yellow tongue and keen sense of smell to find their food, usually rotten, dead animals. They can smell rotten food from almost 10km away. They are mainly scavengers but will also hunt animals such as pigs and water buffalo. They use their serrated teeth to injure their prey. Within their mouths, they have deadly bacteria and a unique venom, all of which are put into the prey through the injury. The komodo will then watch and wait for its prey to slowly die of blood poisoning caused by the bacteria (and helped by the venom).

In the wild, their populations are currently stable but because Komodo dragons are limited to islands they are at risk from natural disasters (e.g. storms), and human activities (e.g. poaching and habitat destruction).

Colchester Zoo has several komodo dragons in various exhibits around the zoo. Colchester Zoo was the first zoo in the U.K. to breed Komodo dragons naturally aiding the Komodo dragon European Endangered Species Breeding Programme (EEP)

COLCHESTER ZOO
Action for the Wild

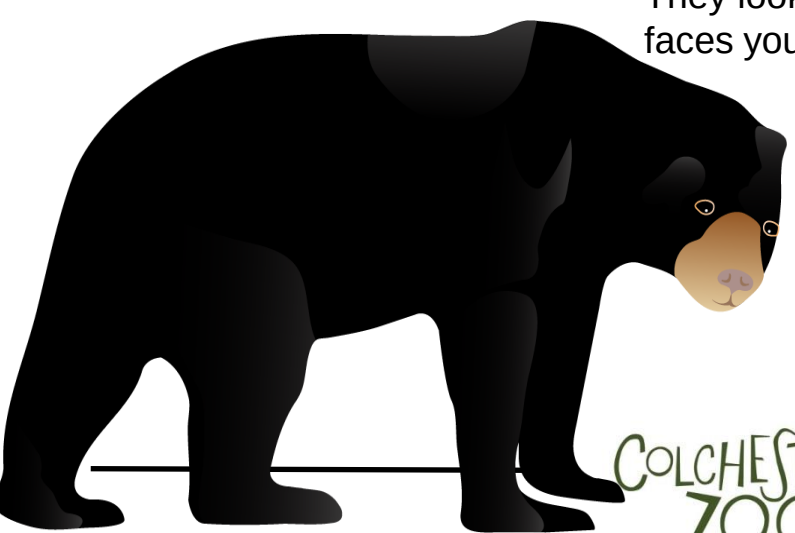
Helarctos malayanus

Sun Bears

Habitat: Dense rainforests
Distribution: South-eastern Asia
Diet: Termites, bees, other insects, honey, vegetation, fruit, nuts, birds and other small vertebrates
Longevity: Up to 25 years
Estimate number in wild: Unknown; estimated decline of over 30% in last 30 years
Status: Vulnerable

Sun bears are the smallest of all eight bear species. They are called the 'sun bear' due to their white-golden crescent marking on their chest, which in ancient Eastern folklore, represents the sun. Another name for the sun bear is the honey bear, because they love honey (honey comb and bees as well!). The sun bear is excellent at climbing trees. The pads of their feet are smooth and hairless to help them grip, and their long claws help them grab while climbing. Their claws are also good for ripping open termite mounds and tearing apart bee nests to get food. Sun bears are most active at night, and during the day can be found sleeping and sun bathing in tree branches.
Sun bears are classed as vulnerable, and have rapidly declining numbers. Their main threat in the wild is habitat loss. They are a rainforest species, and the forest they live in are cut down for wood products and clearing land for farming. They are also illegally hunted, for use in bear paw soup or traditional medicine (which uses bear gall bladders). Because they are so small, they are also targeted by the illegal pet trade.

Colchester Zoo has two sun bears which had a hard start to life. The boy, Jo-Jo was confiscated from a bar in Cambodia when he was 6 months old. He was kept in a tiny cage to amuse tourists. Srey ya, the girl, was confiscated by anti-poaching patrols. She was so small, she only weight 300g, had barely any fur and her eyes weren't even open! Luckily for our bears, they were rescued, and now have an easy life at Colchester Zoo.



They look very similar, but if you study their faces you can tell them apart. Jo-jo has a tan muzzle, and the rest of his face is black. Srey ya has faint gold-tan markings above her eyes, like she's wearing golden eye shadow.

COLCHESTER ZOO
Action for the Wild

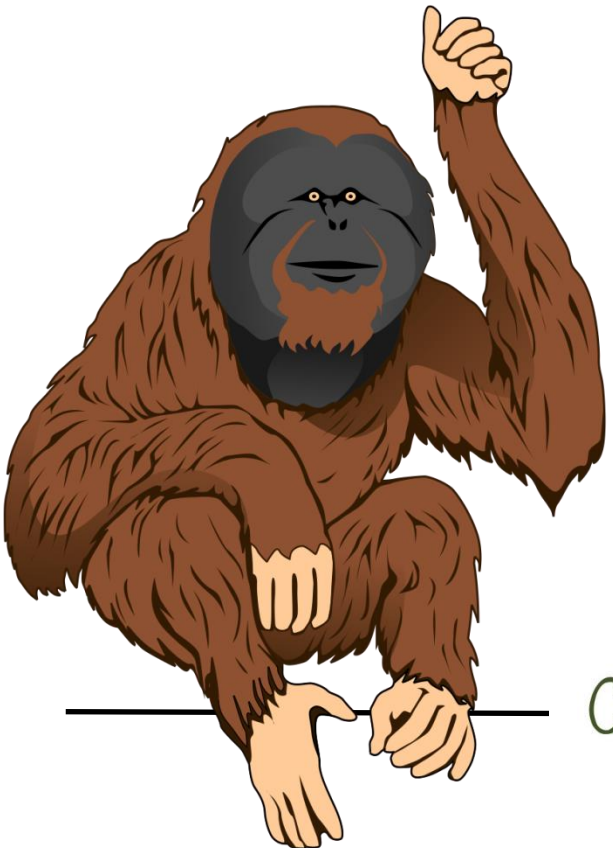
Pongo pygmaeus

Bornean Orangutan

Habitat: Tropical rainforest
Distribution: Borneo and Sumatra
Diet: Mainly fruit, also leaves, bark, nuts, eggs and small vertebrates
Longevity: Up to 35 in the wild, and 50 in captivity
Estimate number in wild: ~54,000
Status: Critically Endangered

The name orangutan means ‘man of the woods’ from the Malay words: orang meaning ‘man’ and utan meaning ‘forest’. Orangutans are very well adapted to life in the rainforest. Their long red-orange fur helps camouflage them (red is hard to see in rainforests, because red light is absorbed by the green leaves). They have long arms (almost twice the length of their legs), perfect for swinging through the forest. Their hands and feet are large and curved, providing them with excellent grip. Adult males have facial flanges and a large throat pouch. These help the males make extra loud noises when they communicate with other orangutans far away in the forest. This communication is usually about territory, since orangutans are usually solitary (unlike the other great apes: chimpanzees, bonobos and gorillas). Orangutans are highly intelligent, using leaves as umbrellas and sticks to catch fish.

Orangutans are critically endangered. Their major threat is habitat loss, which is especially problematic because the only place they live are the islands of Indonesia. The rainforests of Indonesia are being cut down to create palm oil plantations. This is a very high profit crop and it is thought that 10% of all supermarket products contain it. As the rainforest is cut down, orangutans don’t have anywhere else to live.



Colchester Zoo has two orangutans, Rajang and Tiga, both male. Rajang is a hybrid Bornean and Sumatran orangutan born in a zoo in 1968. Tiga is a pure Bornean orangutan, born in 2001. Tiga has slightly darker fur and more forward facing cheek pads. The easiest way to distinguish them is their behavior. Rajang was raised by people as a baby, so he has a very inquisitive nature and loves to watch people up close. If the orangutan is close to the glass and looking right at people, it is probably Rajang.

Rusa alfredi

Visayan Spotted Deer

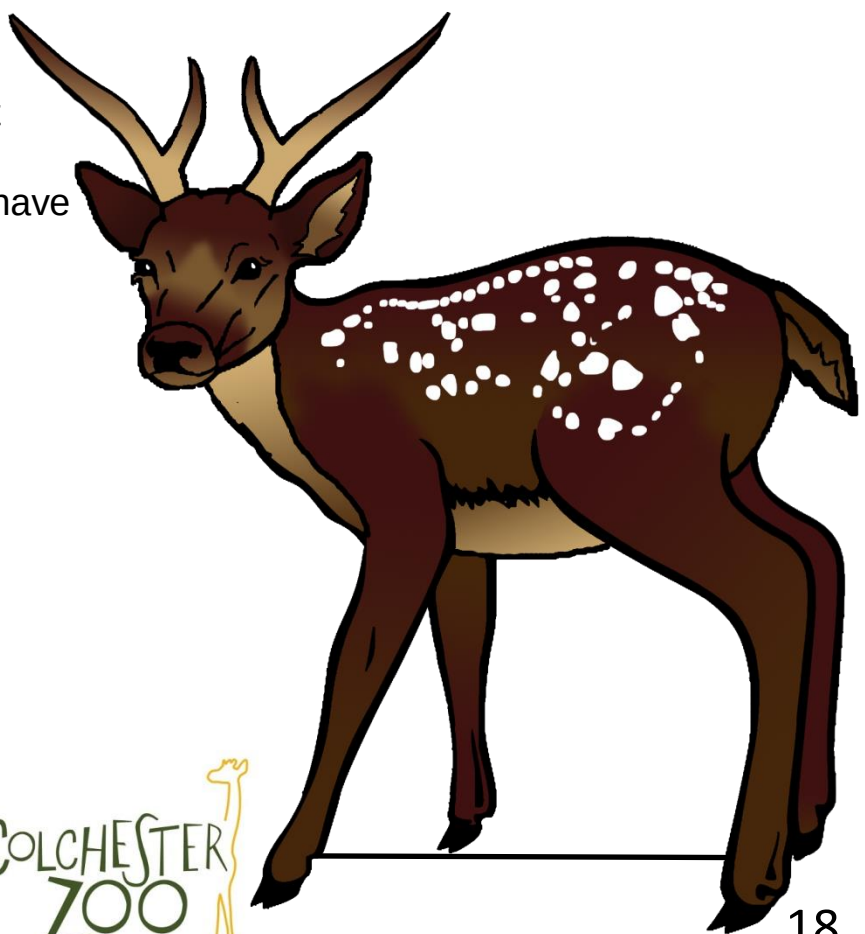
Habitat: Tropical rainforest, woodland forest, grassland
Distribution: Philippine Islands of Negros and Panay (Visayan Islands)
Diet: Grasses, leaves and bud
Longevity: Suspected maximum of 15 years
Estimate number in wild: ~Less than 2,500
Status: Endangered

The Visayan spotted deer (also called the Philippine spotted deer) is one of the most narrowly distributed mammals in the world. They only live on two of the Visayan Islands. Their rainforest and woodland habitat has been extensively cleared for farm land. Due to this they are estimated to be extirpated from 95-98% of their former range.

They are comparative small deer, only 80cm tall. They prefer dense forest habitat and are nocturnal. Due to this, very little is known about them and they are hard to manage. This lack of knowledge makes population estimates difficult, and some estimates are as low as 300 individuals in the wild, while more conservative estimates are as high as 2,500.

The major threats to the species are habitat loss and hunting. Despite legal protection, this species is still intensively hunted by local farmers for food, and recreational hunters for trophy antlers. There is also demand for these small deer as pets, so many are captured from the wild. Their habitat continues to be loss due to illegal logging and agricultural expansion.

Colchester Zoo's Philippine Spotted Deer are part Of an international breeding Programme. And to date, there have been two fawns born

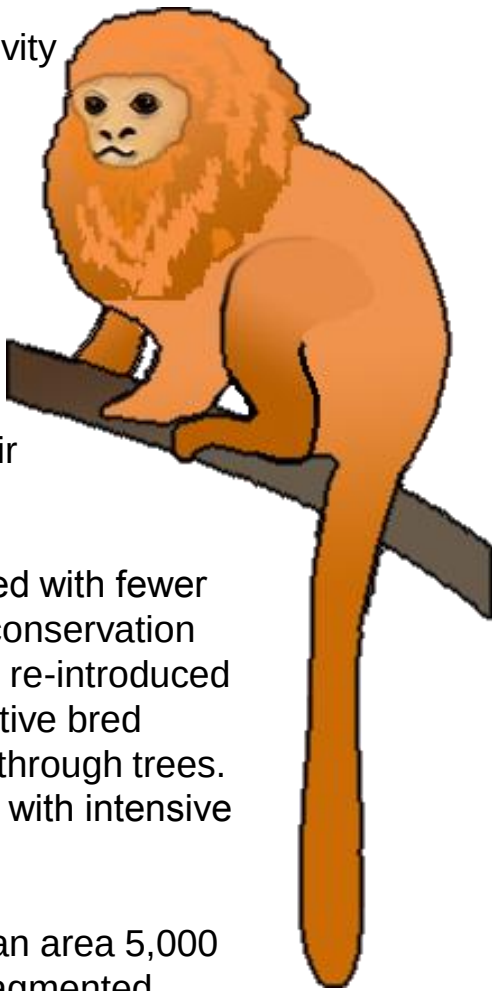


COLCHESTER ZOO
Action for the Wild

Leontopithecus rosalia

Golden Lion Tamarin

Habitat: Rainforests
Distribution: Eastern Brazil
Diet: Mainly fruit, flowers, tree sap, leaves and insects
Longevity: About 10 years in the wild, up to 18 in captivity
Estimate number in wild: ~1,000
Status: Endangered



These tiny monkeys are only 40cm in length (including tail!). They have silky gold fur and a large 'mane' of fur around their face. Like all the tamarins they live in monogamous pairs, which is unusual among the primates, and usually rear twins. The offspring may remain in the group, even when adult, and help rear their younger siblings.

In the early 1980's, this species was critically endangered with fewer than 400 in the wild and 80 in captivity. After extensive conservation efforts and breeding programmes, captive animals were re-introduced into the wild. Initially there was high mortality as the captive bred individuals had problems foraging for food and jumping through trees. By the mid 1960's over 130 animals were released, and with intensive conservation, the population in the wild was over 600.

The species is still endangered since it is only found in an area 5,000 km² in the wild, and this remaining habitat is severely fragmented. Although the situation seems to be improving as wild populations are augmented by captive-bred individuals (1/3 of wild species originated from captive stock), there remain a number of threats to the species in the wild, and the continuation of conservation activities is essential to ensure that the enormous successes seen to date are not undone.

Colchester Zoo has a number of Golden Lion Tamarins, which live in a group. The largest group of them can be seen in the Worlds Apart exhibit.

Panthera tigris ssp. altaica

Amur Tiger

Habitat: Tundra, deciduous (woodland) forest, and coniferous forests
Distribution: Amur-Ussuri region of eastern Russia
Diet: Large herbivores such as wild boar, deer and elk
Longevity: 17 years in the wild, longer in captivity
Estimate number in wild: ~360
Status: Endangered

The Amur Tiger, formally known as the Siberian Tiger is the largest of the five tiger species and the largest of all the big cats. Males weighing around 363 kg and measuring up to 3.4m in length (nose to tail). Females are smaller at only 226 kg.

The Amur Tiger is well adapted to life in the cold. It lives in an environment where temperatures can drop as low as –40 ºC.

It has a thick fur coat and layer of fat underneath the skin to insulate it from the winter snow. The tiger's stripes act as camouflage, which helps them blend into their forest environment. This camouflage is essential for stalking animals such as Sika deer and wild boar.

The Amur Tigers is one of the most endangered species of tiger. Their population continues to decrease due to illegal poaching and habitat loss. Poaching is for their thick fur, as well as body parts. Their body parts are used in traditional medicine. Almost every part of the tiger is believed to be a medicinal cure for a range of ailments ranging from fever to skin disease. There is no scientific proof that any of these body parts has any medicinal benefit. Another major factor which is causing the decline of tigers in Russia, is habitat loss. More and more land is being developed for farmland, human habitations or just logged for timber. This not only a problem for the tigers but also for their prey such as wild boar and deer.

There are three Amur tigers at Colchester Zoo. The females are called Anoushka and Taiga, and the male is named Igor.

Panthera pardus ssp. orientalis

Amur Leopard

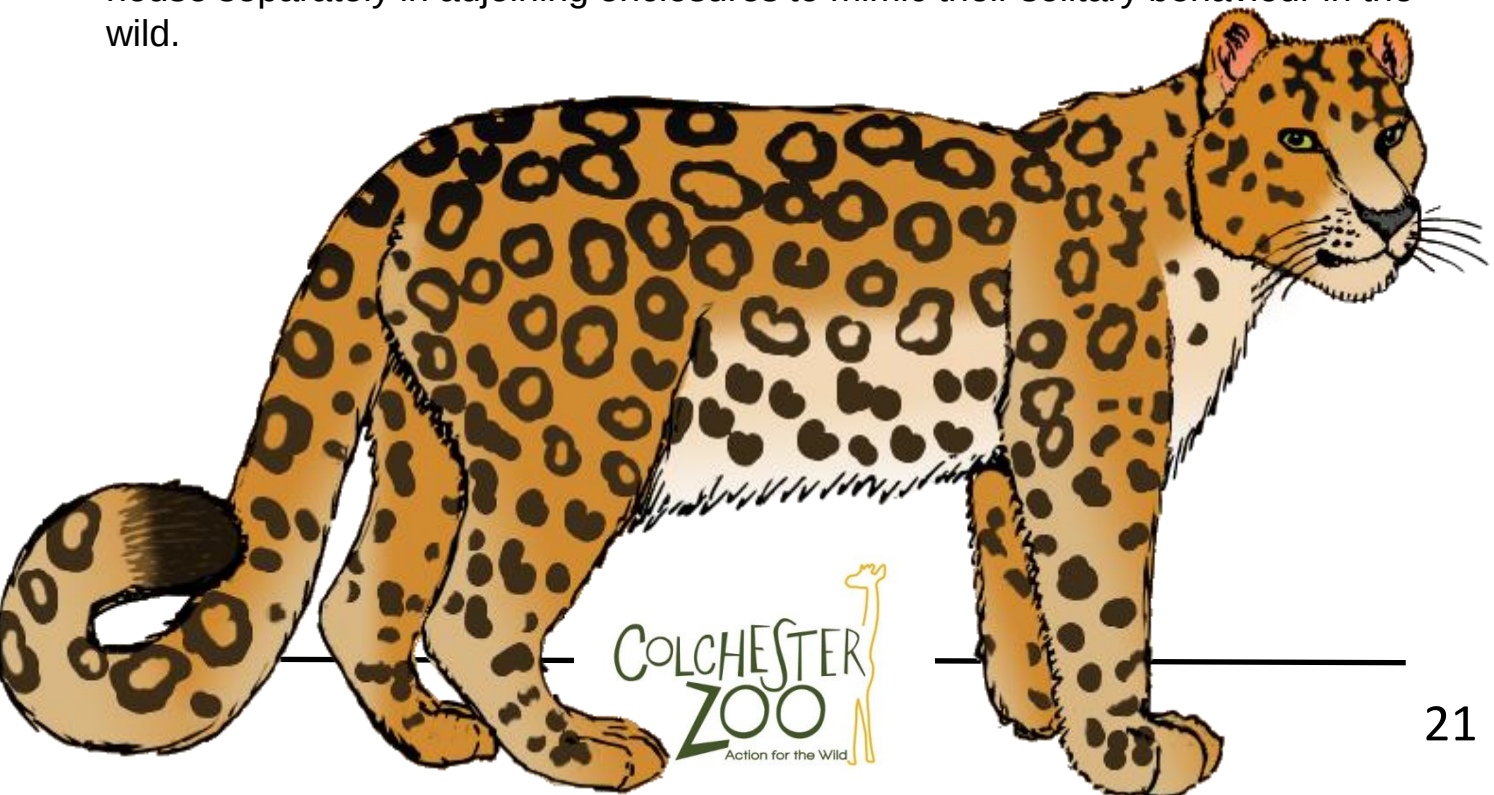
Habitat: Deciduous (woodland) forest, and conifer forests
Distribution: Far eastern Russia along the Russia-China border
Diet: Deer, hares, badgers and other small mammals
Longevity: 10-15 years in the wild and up to 20 years in captivity
Estimate number in wild: Approx. 100
Status: Critically Endangered

The Amur leopard has the most distinctive markings of any of the leopard subspecies. The fur changes from pale cream in the winter to reddish-brown in the summer. The body and sides are covered in widely spaced, large rosettes (open spots) with a thick unbroken border and darkened centres. The head is covered in many small spots, which become larger on the legs and stomach. They are solitary and hunt mostly at night, using a stalk and ambush technique. Amur leopards are strong climbers and may even take their prey up into the trees to eat.

They have large home ranges which will vary in size depending on the availability of their prey, the more prey available, the smaller the range. Amur leopards use a distinctive rasping call for communication rather than the growl of the other cats.

Amur leopards face a number of threats. They are hunted for their fur and for use in traditional medicines. Their habitat is also being destroyed causing depletion in their prey. Their small population size also puts them at risk from catastrophes such as fire, disease and inbreeding problems.

There are two Amur leopards at Colchester Zoo. This male and female pair are house separately in adjoining enclosures to mimic their solitary behaviour in the wild.



Pre-Trip Classroom Ideas:

These are ideas to help prepare your class for a unit about endangered animals. Use these ideas as a starting point with or without the pre-made activities and worksheets on the next pages.

1. Learn vocabulary words with students (see next page for list)

2. Discuss the term 'endangered'. For older pupils investigate different levels of conservation status: extinct, endangered, threatened, least concern, etc.

3. Play a guessing game about zoo animals. Count and graph how many clues it takes for each animal. Which animals are easiest to guess?

4. Have students create food chains showing connections between endangered animals and other animals in the same ecosystem. Students will need to research animal diets and ecosystems.

5. Pupils can research an endangered animal. Using this information, they can campaign for their species: design posters, hand out informational pamphlets, have a fund-raiser (donate money to a wildlife organisation), write letter to government officials and local newspapers.

6. Cut pictures from magazines or find pictures online and make a class collage of animals they want to see at the zoo. The collage could focus on animals with similar adaptations, animals that live in the same habitat, etc.

7. After learning about extinction, pupils can express their own feelings about endangered species (potential activities include: poetry, short stories, play, sculpture or painting).

8. Read about what animals need to survive in their habitat. Pupils can design a zoo living space for their favourite animal. Make sure all the animal's needs are met. Follow this up at the zoo by investigating the enclosures and seeing how they compare.

9. Write descriptive words to describe zoo animals, for example describe: orangutan's fur, parrot feathers, python scales, etc.

Pre-Trip Classroom Ideas:

Vocabulary Words:

Captivity:	Kept in confinement or otherwise controlled environment
Camouflage:	Colours and patterns that help animals blend into its surroundings
Carnivore:	An animal that mainly eats meat
Deforestation:	Removal of forest trees to use the land for something else (e.g. farms)
Ecosystem:	The complex community of interacting plants and animals in a specific habitat
Endangered:	Very few left, it faces major threats, and it might go extinct (see previous page for full category descriptions)
Extinct:	All of that species is now dead; it is no longer found anywhere
Extirpated:	A species which is extinct in one specific area, but still found elsewhere in the world (e.g. wolves are extirpated from the UK)
Habitat:	The type of place an animal lives (e.g. savannah, rainforest, etc.)
Herbivore:	An animal that mainly eats plants
Invasive Species	An animal removed from its native environment (on purpose or accidentally) and place in a new environment where it takes over (e.g. rats, rabbits, etc.)
Omnivore:	An animal that eats plants and meat
Pesticides:	Chemicals used to kill various pests (typically insect and rodent agricultural pests)
Poaching:	Illegal hunting of animals
Pollution:	Anything which doesn't belong in nature and is put there, including: light, chemicals, sound, litter, etc.
Predator:	An animal that hunts and eats other animals
Prey:	An animal that is eaten by other animals
Scavenger:	An animal that feeds on dead animals
Species:	A group of animals that have similar characteristics and can produce offspring.

Pre-Trip Classroom Activities:

Food, Water, Shelter, Space

This activity helps pupils visualise the importance of good habitat

Time: 10-20 minutes
Ages: Year 2 and up (ages 6 and up)
Subjects: Physical Education, Maths
Materials Required: Cups and pom-poms

Prior to this activity teach the pupils the essential components of habitat: food, water, shelter and space. Review these components and create actions for them, e.g. food = rub belly, water = cupped hands to lips, shelter = hold hands over head, space = hold hands open wide.

Mark two parallel lines on the ground or floor on either side of a room. Ask two volunteers to be monkeys and have them stand behind one of the lines. The rest of the class is the habitat, have them stand behind the line on the other side.

Explain that the monkeys need to find food, water, shelter and space in their habitat in order to survive. Have both groups turn around with their backs to each other. Everyone needs to choose a habitat component and make an action for them. Remind them that they are not allowed to change their action. At the teacher's signal, both groups turn continuing to show their component action. Habitat stays where they are, and the monkeys run across the room and finds the habitat component that matches them. The monkeys bring their matching habitat component back to their line, where they now become monkeys, representing successful years resulting in more monkey offspring. Any monkeys that don't find their match die and rot, and become part of the habitat and go stand behind the habitat. Repeat.

After each round have the pupils count how many monkeys are alive. Place pom-poms in the cups to represent this (two monkey = two pom-poms), with a new cup for each round. Each round represents a year. Continue the game for at least five years. Some years there will be lots of monkeys, some years not as many.

At the end of the game, discuss what happened. Show the pom-poms and make a graph of them indicating the changing monkey population. Have older pupils construct graphs based on this data. Explain that the results show that when the habitat meets all their needs there can be many animals, and when the habitat has problems (e.g. a cold year with little fruit) the animal populations decline.

Pre-Trip Classroom Activities:

Habitat Fragmentation Game

This game reinforces the concept that some animals need specific habitat, as well as the concept of habitat fragmentation.

Time: 20 minutes
Ages: Year 3 and up (ages 7 and up)
Subjects: Physical Education, Science
Materials Required: Carpet tiles or coloured paper to stand on

Start by explaining to students that some animals have very large territories. African hunting dogs have very large territories because they live in huge packs. Packs used to have over 100 dogs in them, but now due to habitat fragmentation most packs are smaller than 30 dogs. They live in savannahs and woodlands that are being changed into farms. Because they need so much space, most of Africa's national parks are too small for a pack of wild dogs. This means the packs leave the parks searching for food, and are killed by farmers.

After explaining the background, play the game. Explain that it is similar to musical chairs. Divide the group into 'packs' of wild dogs (groups of 2-4). Set up carpet tiles or coloured paper on the ground in groups around a room. To start off with, have more than enough for the entire class and have them in a large group (all the carpet tiles toughing together). Before the game explain that they must find a habitat that has at least as many tiles/pieces of paper as their pack (a group of 2 needs to find 2 titles side by side; a group of 4 needs to find 4 tiles together; etc.). Groups can share tiles (two different groups of 4 can squeeze onto 4 tiles together).

At a signal (teacher clapping, music, etc.) the pupils run around holding hands with their 'pack'. On another signal (clapping or music stops, etc.) the pupils must find a habitat with their pack. After a round, the teacher starts moving the tiles around. Do not remove the tiles from the game, but simply rearrange them so they are in smaller groups (start with all the tiles together, then have two groups of tiles...end with all the tiles individually around the room). As 'packs' have a hard time finding an appropriately sized group of tiles, break the 'packs' into smaller group (or for older pupils eliminate them from the game). The game will eventually end with everyone out, or with everyone by themselves on 1 carpet tile. This can then lead into a discussion of if the group thinks African hunting dogs can survive by themselves without their pack. Reinforce that there is still the same amount of habitat (no tiles removed), but because it's split into tiny pieces, it's not as useful for animals that need large territories.

Pre-Trip Classroom Activities:

Food Chain Go Fish

This card game is a fun way for pupils to learn about food chains.

Time: 30 minutes
Ages: Year 3 and up (ages 7 and up)
Subjects: Science, art
Materials Required: A4 paper, scissors

Have your pupils work in pairs. Explain that they will be designing their own card game, a little bit like go fish. Each group now needs to brainstorm five different food chains of three plants/animals. If this is a new topic, go over some examples with the group, for older pupils, have them create their own. Remind them that all five need to be different. Potential food chain examples are:

- Sea weed—sea turtle—shark
- Grass—mouse—snake
- Pond algae—fish—alligator
- Acacia tree—giraffe—lion
- Rotten log—termite—sun bear

Give each pair 2 pieces of A4 paper. Each pair should cut their pieces of paper into 8 (so at the end they have 16 smaller pieces of paper). They should now label all of their cut out pieces out pieces of paper with each of the animals/plants on their food chain lists. The extra piece of paper can be used to create a label or instruction card for their game. Encourage the pupils to colour and decorate each card, have them draw the animal or plant.

After their cards are done, pupils can play a game of Go-Fish. Each person starts off with four cards and a draw pile. They then ask their opponent for an item that would complete one of the food chains (e.g. do you have the shark?). If they do, their opponent hands it over, if not they say “go fish” and they pick up a card from the draw pile. The first person to complete two accurate food chains with the game.

For a more complicated, or longer game, have pupils make 10 different food chains (with 4 pieces of paper, and 32 cards), or put two groups together so that four pupils are playing with two decks.

Pre-Trip Classroom Activities:

Why are Animals Endangered?

This is an interactive way to get younger pupils thinking about threats animals face. Rather than just reading/hearing about problems, pupils will experience the effects of problems to an animal's environment and brainstorm solutions.

Time: 10 minutes per day
Ages: Reception to year 6 (ages 5-11)
Subjects: Science, Citizenship
Materials Required: toy/plastic animal and habitat

Bring in a toy/plush animal (plastic duck, stuffed bear, etc.) and pretend it is a living animal. Brainstorm with your pupils what the animal needs to survive (food, water, shelter). For younger pupils keep this very basic, for older pupil this could be specific types of food, specific habitat they prefer, etc.

Set up a small area in the classroom with everything the animal needs to survive. What is set up will depend on what the toy animal is. Potential things to include might be: branches from a tree, a shallow dish for a pond, a pile of rocks as a cave, dried leaves, cling-wrap as a pretend river, etc.

Each day when pupils come into the classroom they will discovery that something bad has happened and the animal is missing. As a class, discuss the problem and solutions, after the pupils can restore habitat, bring back the animal.

Potential problems and solution:
Habitat destruction (remove branches, take away pond, etc.); solution: building bird boxes, plant wildlife gardens, buy rainforest friendly products, etc.

Pollution (green slime in water, litter on ground, black paint 'oil' on sand or plants); solution: always put litter in the bin, don't pour chemicals down the drain, recycle, etc.
Invasive Animal (bring in another toy animal and have it 'eat' all the plants, or have the class animal 'run away' to escape the potential predator); solution: it's hard to deal with the problem after it's here, but one thing we can all do is promise to never move animals around, never release pet animals into the wild, never catch fish or frogs and move them to new ponds, etc.

Poaching (animal is missing and a net/trap is in the habitat); solution: don't buy animal products, educate people about medicine made from wild animals, etc.

Pre-Trip Classroom Activities:

Frog Life Lottery

Frogs, and other amphibians, are one of the most endangered group of animals in the world. This activity demonstrates how difficult it is for a frog to survive, and how important human action is to their survival.

Time: 15 minutes
Ages: Year 2 and up (ages 6+)
Subjects: Science, Citizenship
Materials Required: Set up numbered cards (1-30) one for each student, lottery key

Amphibians have existed on earth for about 300 million years, yet within the last several decades more than 120 species are believed to have gone extinct forever due to human activities. When you're at Colchester Zoo you can visit numerous frog species around the zoo, most of which are endangered.

In 2006, a 442 species of amphibians were listed as critically endangered, 738 were endangered and 631 were listed as vulnerable. Overall 1 in 3 amphibians are at a risk of extinction! That number continues to go up. The largest threat to amphibians is habitat loss, responsible for approximately 1,800 endangered species of amphibians.

Provide each student with a lottery ticket (a piece of paper with a number 1-30 one it). If there are more than 30 pupils, get them to share cards, if there are fewer than 30 pupils, ensure a pupil gets the winning ticket (#20). The activity is more fun if the pupils all stand in a circle and actively participate, but will also work sitting at desks. After handing out the cards tell the participants that they are all frog eggs. The teacher slowly reads through the lottery key, explaining the horrible things that could happen to the frog eggs. It works best to read the number after reading the description. Get the group to sit down, or alternatively preform a dramatic death scene, as they die so everyone can watch the declining population.

For older pupils, as an extension tie the game into a discussion of K-life strategies vs. L-life strategies and why each is beneficial in its own way.

Pre-Trip Classroom Activities: Frog Life Lottery Key

Hand out lottery cards to all participants, read through the cards in order, explain what happens and then reading the ticket number

Egg: *a female frog may lay 1,000 eggs, but only a handful of these will survive to become breeding adults. A developing frog faces numerous threats throughout its life cycle.*

5	Acid water from pesticide run off. You fail to develop.
1	A dog picks up the branch you are attached to. You dry up and die
7	Children are playing in the pond, you are covered in mud and suffocate.
26	Your water is not clean, you get mould which rots your tail before killing you
19	Fertiliser runs into your pond causing an algae bloom, you suffocate!
27	A hose is turned on and tap water flows into your pond. The chlorine kills you.
13	Your pond dries up before you can hatch.
12	Mountain bikers splash through your pond and you get squashed.
18	Your pond gets polluted by litter, the chemicals kill you.
21	The plants at the edge of the pond are removes, the water gets too hot and you die.

Tadpole: *you have reached the next level! You have a disc-shaped mouth to eat pond algae and other small plants. You breathe through gills, and use your long tail for swimming. After you develop legs you start eating meat.*

3	Invasive Canada Geese pollute the water with poop, you can't breathe and die.
8	You were caught by children who did not return you to the pond.
22	Your pond is drained! You die.
2	Pesticides from nearby yards get into your pond and you are killed.
14	Invasive Water hyacinth covers the surface of your pond, you suffocate.
24	Nearby road construction causes silt to flow into your pond, you suffocate.
25	An infection wreaks your ability to balance water in your body – you explode
11	You are eaten by an invasive carp.
28	There are not enough bugs in the pond, you all turn cannibalistic and you are eaten.

Newly Emerged Adult: *You have developed lungs, and strong back leg after reabsorbing your tail. Depending on your species, you might leave the pond. There are new dangers.*

23	Your pond has high edges with no rocks or plants. You can't climb out and drown.
17	You tried to cross a road and were hit by a car.
9	Frogs infected with fungus are turned loose in your pond, you die.
10	Your pond is surrounded by a car park, no habitat for adult frogs.
4	The nearby trees are cut down and you over heat in summer. You bake.
29	You are infected by Ranavirus (red-leg) and the virus kills you
15	The trees are cut down and you have no shelter in winter. You freeze.

Adult Frog: *You have survived one year of life. You are ready to breed. This is an extremely dangerous time for you.*

6	You return to your pond to find it filled in, there is nowhere to lay eggs.
16	There is no vegetation to attach your eggs to. Your eggs die.
30	You are caught and eaten by a cat.
20	CONGRATULATIONS! You have successfully survived as an adult frog and laid eggs.

At the Zoo Ideas:

These are ideas to help your class focus during their trip to the zoo. Use these ideas as a starting point with or without the pre-made activities and worksheets on the next pages.

1. Use the worksheets in this pack to help focus your students.

2. Encourage students to spend time observing the animals. Some unique animal behaviours can only be seen if we watch very carefully.

3. Have students make a detailed sketch of a zoo animal, sketching encourages careful observation.

4. Take photos of the animals around the Zoo. When you get back to school make a photo scrapbook of your trip.

5. Attend the feeds or talks and have your students take notes. The keepers will tell you about the animals, and their threats. Often the keepers are available after to ask questions if you want to learn more.

6. Observe the enclosures to determine what makes a good home for an animal. Pay attention for anything that looks like it's entertain to the animals, zookeepers call they things enrichment. Enrichment for animals includes: wrapped boxes, toys, interesting smells, strange things (e.g. wellington boots, old brooms, etc.).

7. Pupils can examine the animal enclosure and determine, if they were an animal at the Zoo, which enclosure would they want to live in? Why?

8. Divide students into groups and have each group record down the name and threats of endangered animals they see (information is on all the enclosures). Which group can find the most endangered animals?

At the Zoo Activities:

Camera

This activity gets students focusing quietly and independently, and works well when pupils are taking real photos to get them to decide what to take photos of beforehand.

Time: 15 minutes or more
Ages: Years 1 - 4 (ages 5-8)
Subjects: Art, ICT, observational Science skills
Materials Required: Cameras (optional), small bits of card (optional), pencils (optional).

Before starting, take time to talk with the pupils to consider what make interesting subjects for good photos. Should they take close up images? Are walls interesting? Is it easier to take photos of an animal that moves a lot or an animal that's resting?

Find an animal that the pupils can stay focused on rather than get over excited when they see the animal. Divide the pupils into pairs. Within each pair one student takes the role of photographer and one takes the role of camera. The child pretending to be the camera keeps their eyes closed while the photographer leads them to an interesting viewpoint.

The photographer chooses when the camera opens their eyes and takes a picture. A good way to do this is to have the photographer gently tap the camera on their shoulder to have them open their eyes. When the camera opens their eyes, their job is to try to remember and visualise everything they see in front of them: Do they see an animal? How many animals? What is the enclosure like? What textures do they see? When taking photos it's best if the camera only has their eyes open for 5-10 seconds, then closes them again. Have the photographer move the camera to a few different locations. Do they see different animals? Is there a slightly different view point? After they've taken a few 'photos' have them switch roles.

Optional: If the group has actual cameras, have them all select their favourite photo from their activity and see if they can capture it using their real camera/s.

Optional: for an extended activity, hand out small bits of card to each pupil. Explain that they are going to process the photos they took with their eyes. Have them select their favourite image they photographed (real or with just their eyes) and have them draw the picture on the card, just like a photo.

At the Zoo Ideas: Senses Scavenger Hunt

Ages: *years 1 - 4 (ages 5-8)*
Subjects: *Art, Science*

Draw pictures of the animals or things when you find them:

SOMETHING SMELLY

SOMETHING HARD

SOMETHING WET

SOMETHING SPIKY

4 SOFT LOOKING THINGS

SOMETHING WARM

At the Zoo Ideas: Patterns Scavenger Hunt

Ages: *years 1 - 4 (ages 5-8)*
Subjects: *Art, Science*

Draw pictures of the animals or things when you find them:

A SPOTTY PATTERN

A STRIPY PATTERN

A BRIGHT PATTERN

A WRINKLY PATTERN

A VERY TALL PATTERN

A PRETTY PATTERN

At the Zoo Ideas: What's the Danger

Ages: *years 4-9 (ages 8-14)*
Subjects: *Science*

Animals are endangered for different reasons. Read information about threats to the animals on signs at their enclosure.
Write the name of an animal that is threatened for each reasons:

1. Animal has only one or two babies at a time _____
2. Animal needs a special place to nest _____
3. Animal lives close to major cities _____
4. Animal home changed to farm land _____
5. Animal hunted for fur _____
6. Animal killed because people don't like them _____
7. Animal's food is taken by people _____
8. Animal who is killed for tusks or horns _____
9. Animal is very, very rare _____

At the Zoo Ideas: Animal Description

Ages: years 4-6 (ages 8-11)
Subjects: Science

What colour is it:_____

It is covered in (circle one): fur feathers scales

It looks a bit like a:
_____

It eats:_____

It lives in the:
_____ habitat

It is the size of a (make a comparison):_____

A cool adaptation it has is:_____

Something very special about it is:_____

_____ _____

At the Zoo Ideas: Animal Research

Ages: years 4-8 (ages 8-13)
Subjects: Science

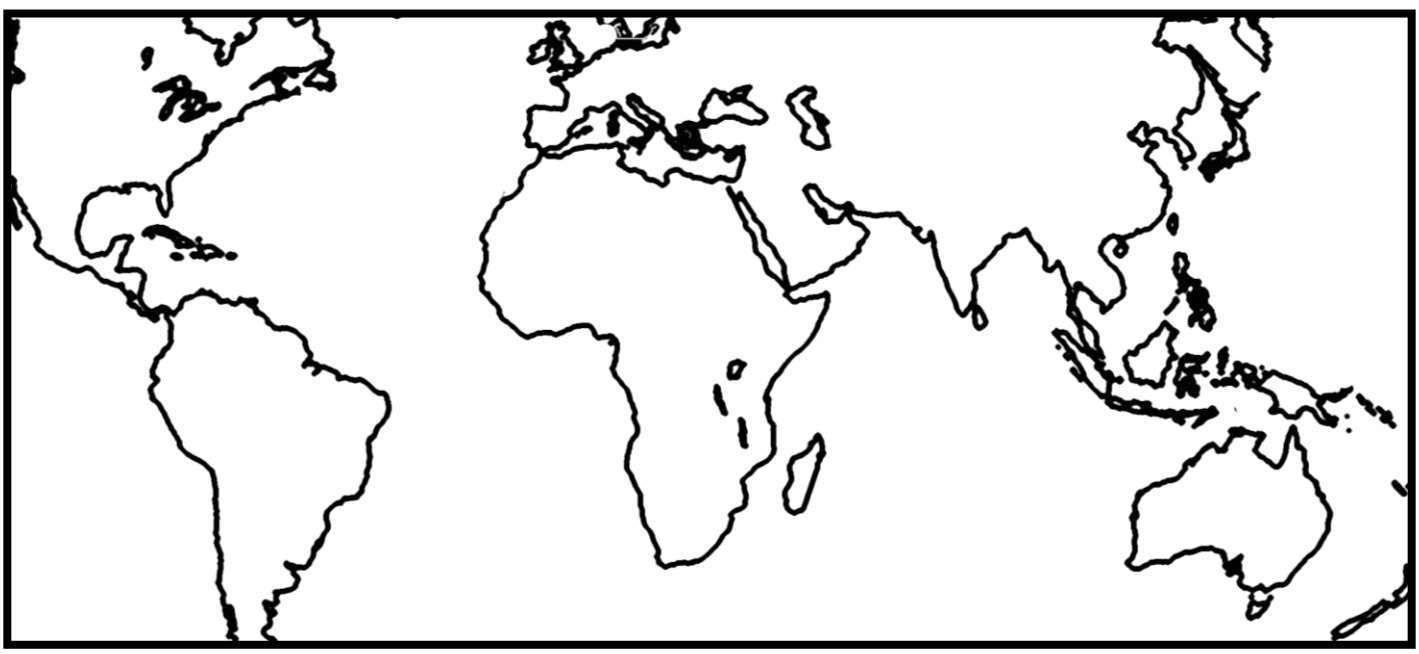
Name of animal:_____

Draw a picture of the animal on the back of this sheet

Type of animal (mammal, bird, etc.):_____

Size (record weight and height, can be an estimate):_____

Type of body covering (fur, feathers, scales, etc.):_____



Mark on the map where it lives in the wild

How does your animal get its food? (grazer, chases prey, browser, etc.): _____

_____

What habitat does it live in:_____
How is it adapted to that habitat:_____

_____

What is the future of your animal in the wild? Why?

_____

_____

_____

_____ _____

At the Zoo Ideas: Observing Animal Behaviour

*Name of animal:*_____

Observe your animal for 10 minutes.
Make a mark each time it does one of the following:

Walks/Runs	Eats	Drinks	Lies down
Sleeps	Yawns	Looks at people	Plays

How can you identify your animal from others in their group:

_____

_____

Which animal in the group is the leader? How can you tell?

_____

_____

What do you think the animal is thinking/feeling (is it hungry? bored? sleepy? etc.)? Why do you think that?

_____

_____

_____

Many animals have things to do to keep them active. Can you see anything like that in your animals' enclosure?

_____

Did your animal interact with it? _____

*What would you give the animal to do and why?*_____

_____

_____

_____

_____

At the Zoo Ideas: Elephant Watcher

Ages: *years 3-8 (ages 7-13)*
Subjects: *Science*

Draw a map of the Zoo's elephant enclosure on the grid below.
Select EITHER the indoor or outdoor enclosure
Show landmarks like their trees, ropes, and walls.

1	2	3	4
5	6	7	8

Pick an elephant to observe at the Zoo. Look at the signs nearby to identify the name of your elephant:_____

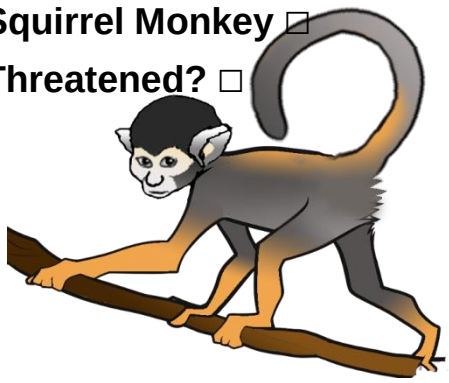
Every minute, record the time. Write the number of the grid where your elephant is. Describe what your elephant is doing.

Time	Grid Number	Observations

At the Zoo: Endangered Animal Spotter's Guide—Top End of the Zoo

On your trip to Colchester Zoo, check off these animals when you see them.
Read the sign at their enclosure to learn if they are threatened
(look for the words: rare, threatened, or endangered)

Squirrel Monkey ☐
Threatened? ☐

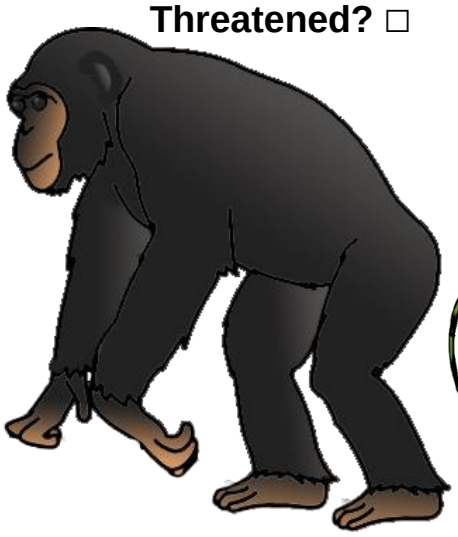


Green Anaconda ☐
Threatened? ☐

Sloth ☐
Threatened? ☐

Orangutan ☐
Threatened? ☐

Chimpanzee ☐
Threatened? ☐



Green Iguana ☐
Threatened? ☐

Geoffroy's Marmoset ☐
Threatened? ☐

Humboldt Penguin ☐
Threatened? ☐

Sun Bear ☐
Threatened? ☐

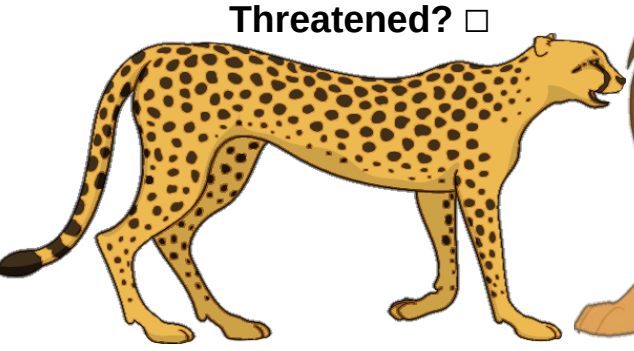
COLCHESTER ZOO
Action for the Wild

At the Zoo: Animal Spotter's Guide— Endangered African Animals

On your trip to Colchester Zoo, check off these animals when you see them.
Read the sign at their enclosure to learn if they are threatened.
(look for the words: rare, threatened, or endangered)

Cheetah ☐

Threatened? ☐



Lion ☐

Threatened? ☐

Hyena ☐

Threatened? ☐

Ostrich ☐

Threatened? ☐

White Rhinoceros ☐

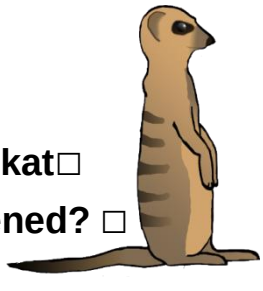
Threatened? ☐

Fennec Fox ☐

Threatened? ☐

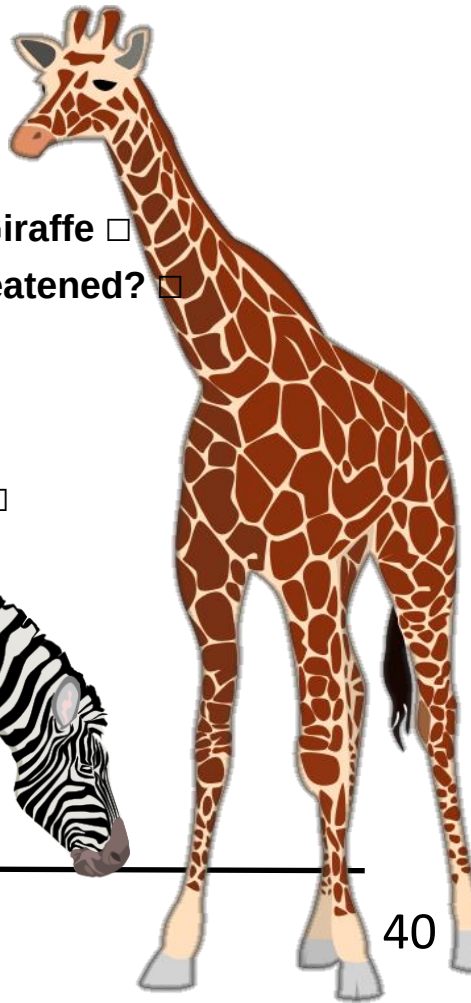
Meerkat☐

Threatened? ☐



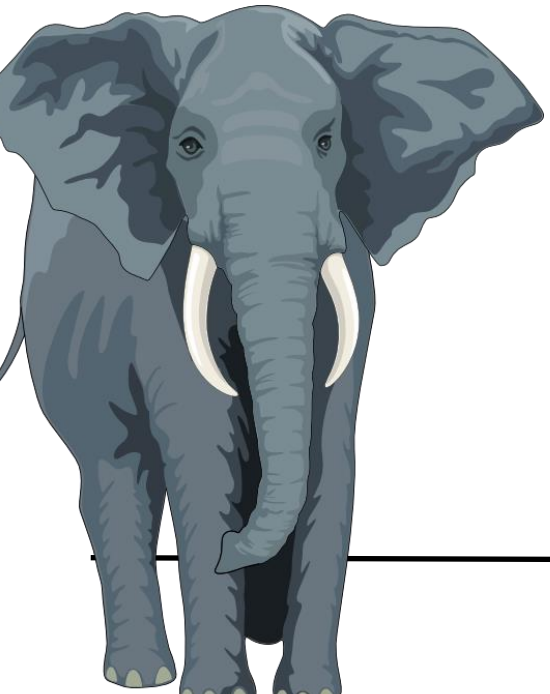
Giraffe ☐

Threatened? ☐



Elephant ☐

Threatened? ☐



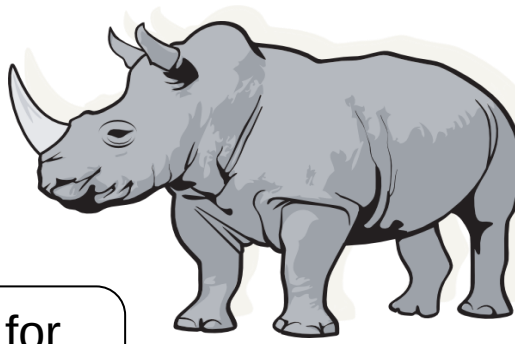
Zebra ☐

Threatened? ☐

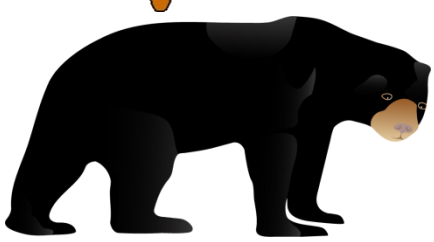
At the Zoo: Animals In Danger

Draw lines matching the animals with the reasons they're threatened.
More than one animal might match each reason.

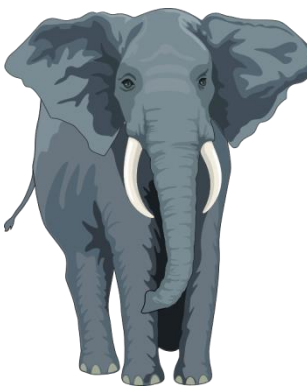
My rainforest home is being cut down!



People use me for medicine



Sun Bear



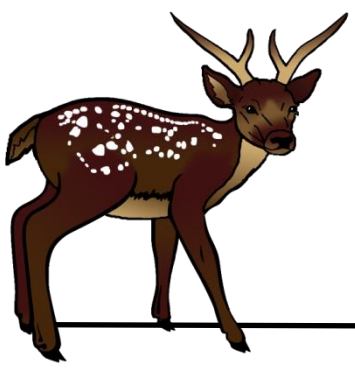
I get tangled in fishing nets.

Amur Leopard

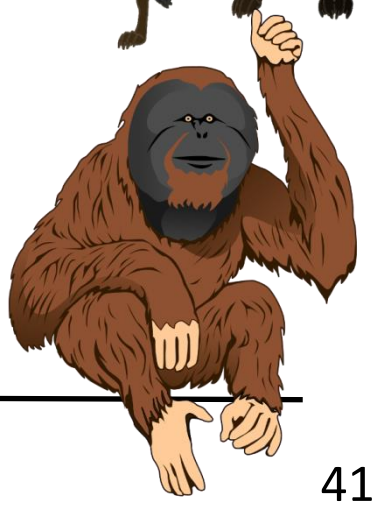
I'm killed for my pretty fur

Humboldt Penguin

People turn parts of me into bracelets and decoration



Visayan spotted deer



At the Zoo Ideas: Feed an Elephant!

***Ages:** years 3 and up (ages 7 and up)
Subjects: Science, Literacy

1. After you have fed the Elephants answer the following questions:

2. What did you feed the elephants?

3. Colchester Zoo has 4 elephants. How many were at the feed?

4. Do you remember her/their names?

5. How interested were the elephants in the food? (Were they hungry, did they come right up to you?) Give details about your observations.

6. Describe how the elephants trunk felt picking up the food. Use as many descriptive words as possible.

7. How did the elephants look close up? Describe what it felt like standing near them.

***All ages can feed the elephants. This worksheet is best for pupils in year 3 and older

At the Zoo Ideas: Endangered Maths

Ages: years 5 and up (ages 9 and up)
Subjects: Science, Maths

Visit the Wilds of Asia exhibit and the surrounding area (hornbills, red pandas, etc.). Can you solve these maths problems?

1) Red pandas eat 1.5kg of leaves, and 4kg of bamboo shoots every day. Red pandas are threatened by habitat loss, since their bamboo forests are cut down, they don't have food.

- How many red pandas did you see?_____
- How much bamboo do they eat every day?

_____kg leaves

_____kg shoots

2) Rhinoceros hornbills are threatened by habitat loss, and hunting for their feathers. Their tail feathers are turned into elaborate headdresses and decoration.

- How many tail feathers does one hornbill have? _____
- If a headdress requires 400 tail feathers, how many birds would be killed to make it?

_____ Hornbills needs for one headdress

3) There are an estimated 70,000 pileated gibbons in the wild. However, due to habitat loss and poaching, their population is estimated to decline 50% by 2015.

- How many will be in the wild in 2015?
- How many gibbons did you see?_____
- If the zoo population declined by 50% how many pileated gibbons would there be?
- How many pileated gibbons did you see?

_____ Zoo gibbon population

4) Burmese pythons grow to be 7 metres long. The are threatened by poaching for food and for their skin. A unprocessed skin sells for £5 a meter. A processed snake skin bag sells for £5,000 (requires 3m of skin)

- How many Burmese pythons did you see?_____
- How much would their skin be worth if sold illegally?

£_____ unprocessed skin

£_____ processed skin

5) Philippine sailfin lizards are threatened by habitat loss and capture for the pet trade. Captured wild lizards can sell for £500.

- How many sail fin lizards do you see: _____
- How much would they sell for on the black market?

£_____ black-market price for sail fin lizards

At the Zoo Ideas: Endangered Maths

Ages: *years 5 and up (ages 9 and up)*
Subjects: *Science, Maths*

Visit the Wilds of Asia exhibit and the surrounding area (hornbills, red pandas, etc.). Can you solve these maths problems?

1) Elephants are killed for their tusks. People care the tusks into trinkets, jewellery and decoration. Illegal ivory (tusks) are sold for £100 per cm of ivory.

- How many elephants did you see?_____
- Estimate the length of their tusks:_____
- How much would their tusks be worth?

£_____
worth of ivory

2) Crowned cranes are threatened by habitat loss as the wetlands they live in are converted to farm land. In 2004 their population was 50,000. It is estimate to decline 60% by 2020.

- How many cranes will be left?
- How many crowned cranes did you see? _____
- If the zoo population declined 60% how many would be left at the zoo?

_____
Wild crane population

_____
Zoo crane population

3) Rhinos are threatened due to poaching for their horns. One large horn weighs 3kg. Their smaller horn weighs 0.5kg.

- How many rhinos do you see? _____
- How much do all the rhino's horns weigh?

_____kg
of rhino horn

4) People grind up rhino horn to use in traditional medicine. Rhino horn is made out of the same material as your hair and fingernails, it does not work. People pay a lot of money for rhino horn. 1 kg of rhino horn is worth up to £60,000.

- How much would the zoo's rhino horn be worth on the black market?

£_____
worth of rhino horn

5) There are a lot of reticulated giraffes. However, their population has declined and continues to decline in certain parts of their range. The main reason for their decline is habitat loss. In the wild, when looking for food, giraffes require large areas of land, up to 650km^2 per giraffe.

- How many giraffes do you see? _____
- In the wild, how much protected land would the giraffes need in order to find food?

_____ km^2

Post-Trip Classroom Ideas:

These are ideas to get teachers thinking about how to relate a school trip to Colchester Zoo to subjects back at school. Use these ideas as a starting point with or without the pre-made activities and worksheets on the next pages.

1. Have students choose a specific endangered animal they saw and conduct in-depth research based on what they observed.

2. Draw food webs for endangered species and discus what will happen if the endangered species becomes extinct.

3. Create a 'zoo guide book' of your school trip to Colchester Zoo. Have students write article about the animals they saw, including pictures/sketches they made during the trip.

4. Design posers to help endangered species you saw at the zoo. Remind pupils to include lots of facts they learned as well as make it eye-catching and decorative.

5. Write stories from an endangered animal's point of view. The animal could describe: where it lives, what food it eats, how changes in their habitat affect them, what it's like to live near humans and what is happening to them.

6. As a class, research an animal that is already extinct. Some species, such as dinosaurs went extinct without humans. Many more are extinct because of humans including, the dodo, Steller's sea cow, quagga, passenger pigeon, great auk, moa, Baiji river dolphin, Tasmanian tiger (thylacine) and Carolina parakeet.

7. Have pupils imagine they are an endangered species (e.g. a white rhino or an Amur leopard) they saw at the zoo. Discus if they would want to be in the wild or if they are happy being in captivity.

8. Take actions to help the environment and endangered species. Possible actions include: create a wildlife garden on school ground construct and install bird boxes, hold a tree planting day, hold a 'clean up' day at your school or nearby location, etc.

Post-Trip Classroom Activities:

Extinction is Forever

Pupils think about what extinction means and what people choose to protect.

Time: 30-40 minutes
Ages: Year 5 and up (ages 9 and up)
Subjects: Science, Literacy
Materials Required: Extinction is Forever worksheet

Before this activity, learn about extinct animals and what extinction means. Have a group discussion about what extinction means and what they think extinction really means. Focus not on the literal (species gone forever) but more on the theoretical and emotional (why do we care when a species goes extinct).

Hand out the, Extinction is Forever worksheets to each pupil. Have them read the famous quotes. Certain words are bold in each quote, indicating the important words. Ask the pupils if they agree the bold words are the most important. Have them underline what they think are the most important words in the quote. After deciding on the important words, have them select their own important words and make a quote about their opinion on extinction. After they have all written their opinion, have the group share what they think.

Post-trip Activity: Extinction is Forever

Ages: years 5 and up (ages 9+)
Subjects: Science; Literacy

Read each of these famous quotes about extinction.
Certain words are bolded for emphasis, do you think they are the right ones?
Underline the words in each quote you think are most important.
After reading them create your own opinion about what extinction means.

"**Extinction** is the rule. Survival is the **exception**."~ Carl Sagan

"An animal that is **very abundant**, before it gets extinct, it **becomes rare**. So you don't lose abundant animals. **You always lose rare animals**. Therefore, they're **not** perceived as **a big loss**." ~ Daniel Pauly

"We **don't know** for sure **how many species** there are, **where** they can be found or how fast they're **disappearing**. It's like having **astronomy without** knowing where **the stars** are." ~ Edward O. Wilson

"**Destroyed buildings** can be **rebuilt**; destroyed works of **art** may possibly be **replaced** by new creations; but every animal and every flower which becomes **extinct is lost forever** in the most absolute of all deaths." ~ Joseph Wood Krutch

"For millions of years, on average, **one species** became **extinct every century**.…We are now heaving more than a **thousand different species** of animals and plants off the planet every year." ~Adams

"There are 23 species [of crocodile]. Seventeen of those species are rare or endangered. **They're on the way out**, no matter what anyone does or says..." ~ Steve Irwin

"People are **not going to care** about **animal conservation** unless they think that **animals are worthwhile**." ~ David Attenborough

WHAT I THINK ABOUT EXTINCTION:_____
_____
_____
_____
_____
_____
_____

Post-Trip Classroom Activities: Rainforest Impact Quiz

Test pupils knowledge of the rainforest while learning about the impacts of deforestation.

Time: 20-30 minutes
Ages: Year 5 and up (ages 9+)
Subjects: Science
Materials Required: Rainforest Impact Quiz

Hand out the Rainforest Impact Quiz to each student. Have them write true or false next to each statement. After completing the quiz, they can switch quizzes with a partner to mark it. As you go over the answers, make sure to explain the ones that are false/true. This activity makes a nice introduction to talking about endangered rainforests and what we can do to help the rainforests.

1. Cutting down the rainforest changes wind patterns around the world. **TRUE**
2. Cutting down the rainforest changes rainfall patterns around the world. **TRUE**
3. The rainforests are the lungs of the planet, they recycle carbon dioxide into oxygen. **TRUE**
4. If the rainforests are completely gone, it won't affect us here in the UK. **FALSE** (as above)
5. Across the world, 20 football pitches of rainforest are cut down every minute. **FALSE** Across the world an area the size of 90 football pitches is cut down in the rainforest every minute
6. At current rates of deforestation the world's rainforests will be gone in 40 years. **FALSE** It is estimated that the rainforests could be gone by 2030!
7. Rainforests are found on every continent. **FALSE** There are no rainforests in Antarctica.
8. Rainforests cover over 50% of the earth's surface. **FALSE** Rainforests cover less than 2% of the earth's surface (most of the surface is covered by the oceans!)
9. The Amazon Rainforests contains 1/5 of the world's freshwater in its rivers. **TRUE** Remember that the ocean's aren't fresh water; most of the rest is in the ice caps and glaciers with a little in large lakes
10. There used to be 15 million km2of rainforest around the world. **TRUE**
11. Now there is just 10 million km2 of rainforest around the world. **FALSE** There are only 6 million km2 of rainforest around the world over half the world's rainforest have been cut down.

Pre-trip Activity: Rainforests Impact Quiz

Ages: years 5 and up (ages 9+)
Subjects: Science; Literacy

TRUE or FALSE

1	Cutting down the rainforest changes wind patterns around the world.	
2	Cutting down the rainforest changes rainfall patterns around the world.	
3	The rainforests are the lungs of the planet, they recycle carbon dioxide into oxygen.	
4	If the rainforests are completely gone, it won't affect us here in the UK.	
5	Across the world, 20 football pitches of rainforest are cut down every minute.	
6	At current rates of deforestation the world's rainforests will be gone in 40 years.	
7	Rainforests are found on every continent.	
8	Rainforests cover over 50% of the earth's surface.	
9	The Amazon Rainforests contains 1/5 of the world's fresh water in its rivers.	
10	There used to be 15 million km2 of rainforest around the world.	
11	Now there is just 10 million km2 of rainforest around the world.	

Post-Trip Classroom Activities:

Who Am I

This works as either an introduction to endangered animals, or a reminder at the conclusion of a unit about what the pupils have learned.

Time: 10-20 minutes
Ages: Year 2 and up (ages 5 and up)
Subjects: Science
Materials Required: Pictures of different endangered animals, clothespins

Have the pupils stand in a line with their backs to the teacher. The teacher clips an animal picture to their back using the clothespins. The pupils should not see, and are not supposed to know what their animal is, everyone else can see their picture.

Have pupils walk around the room and ask questions to each other to guess what animal is on their back. Pupils are only allowed to ask yes or no questions (no asking what their animal is called!). Encourage pupils to ask questions based on information they have already learned. For example, if studying food chains have them ask: am I a predator? If studying colour and camouflage have them ask: do I have stripes? If studying classification, have them ask: am I a mammal? To make the pupils interact more, and ask more varied questions, have a rule that they can only ask another pupil one question, then they need to find someone else to ask.

After a pupil has guessed their animal, take the picture of their back and show it to them. If they have finished very fast, or you want the game to go on longer, give them another one to keep guessing. Depending on how hard the pictures are, some pupils will correctly guess 3 or 4 while some are still guessing their 1st. If some students are struggling, give them hints to make sure everyone guesses at least one correctly before ending the game.

To make this activity easier, review all the animal pictures to start. For older groups do not review the animals and consider using more obscure endangered animals (e.g. pygmy hippo, etc.). If you are using harder animals, make sure they are ones the pupils already know. For harder animals, consider having a label on the picture with the animal's name so that the other pupils are giving correct information.

Post-Trip Classroom Activities:

Ecosystem Tag

This is a running game that reinforces concepts about predators/prey and different levels in ecosystems.

Time: 20-30 minutes
Ages: Year 4 and up (age 8 and up)
Subjects: Physical Education, Science
Materials Required: Arm bands (fabric strips to identify consumers and decomposers); energy chips (bits of card, pom-poms, etc.); pictures of different ecosystem levels

Before beginning this activity, review what an ecosystem is. Remind pupils of the different levels in food webs including producers (plants, e.g. acacia trees, savannah grass), consumers (most animals, e.g. lions, zebras, etc.) and decomposers (insects, worms, bacteria, giant African land snails, etc.).

Divide the pupils into three groups: decomposers, consumers (twice the number of decomposers), and producers (twice the number of consumers) (e.g. 2 decomposers, 4 consumers, 8 producers). Set a boundary for the playing area representing the size of the ecosystem. The energy chips represent energy from the sun, there should be more of these than producers. Place these objects in a box/bucket/etc. in the centre of the playing area.

Each producer takes one energy chip from the box. They can only have one chip at a time, but if they lose it, they can get a new one from the box, because producers can make their own energy from the sun. Consumers get energy from eating producers. The consumers in this game tag the producers and are given their energy chip. Consumers can hold as many energy chips as they can get. The decomposers get to take the energy from the consumers and put it back into the ecosystem. Decomposers tag the consumers and take away ALL their energy chips. When decomposers have the energy chips they put them back in the box/bucket for the producers (plants) to use again.

When the game has been played for a while, ask the pupils how long the game could continue. The answer is forever! But what would happen if there weren't decomposers? Play again to find out what happens without one of the groups. At the end, discuss how each group in the food web is important and has a specific role to play.

Post-Trip Classroom Activities:

Animal Poetry

Pupils use their knowledge of endangered animals to write poetry.

Time: 15-30 minutes
Ages: Year 3-8 (ages 7-13)
Subjects: Literacy
Materials Required: None

Introduce the pupils to different forms of poetry, for example, haiku, cinquain, and acrostic. Show them the example poems. After the pupils are familiar with the concept, they should choose an African animal that they saw at the zoo. Using their memory and imagination they can try and write poetry about the animals they saw.

Haiku
Originating in Japan, the haiku is three line of poetry, following the pattern of five syllables, seven syllables and ending with five syllables. The lines do not need to rhyme. For example:

Fast, stripy zebra	(five syllables)
Running over savannah,	(seven syllables)
Cheetah is faster.	(five syllables)

Cinquain
Cinquain poems have five lines and have specific pattern. Word cinquains are based on the number of words in a line. For example:

Hyena	(one word—an animal)
Clever, cunning.	(two words that describe it)
Stalking wary antelope.	(three words expressing action)
King of the savannah.	(four words explain how you feel about it)
Predator	(sum up with one word)

Acrostic
These are poems where the first letter (or syllable or word, etc.) spell out a word or message. The easiest is spelling out the name of an animals (for older children try hiding messages).
For example:

Rhinoceros are
Hunted for their horns.
Included in medicine, even though there is
No point, rhino horn is not medicinal.
One day soon, they'll be none left.

Post-Trip Classroom Activities:

Conservation Debate

Pupils role play different opinions about conservation.

Time: 20-30 minutes
Ages: Year 4 and up (age 8 and up)
Subjects: Science, Drama, Citizenship
Materials Required: Copies of opinions and questions for each group (or write on board)

Many African animals are endangered, and may go extinct. One reason they're endangered is poaching (illegal hunting). Elephants are poached for their ivory tusks. Their tusks are carved into jewellery and ornaments.

Divide your pupils into groups and assign one opinion to each group. Have them pretend to have that opinion and answer the questions (with the opinion of that person, not their own opinion). Next, mix the groups up, so one pupil with each of the opinion is in all of the new groups (one farmer, one ranger, one tourist). Have them debate their opinions in this new group and try and answer the questions again.

After the smaller groups have discussed their opinions, have each group share their answers with the entire class. What was each groups opinion? Did any of the groups have the same solution for the problem?

As an extension activity have pupils try to determine other groups who might have different opinions about elephants (other than farmers, rangers, and tourists). Repeat the activity with more opinions. Does that make it easier or harder to reach a solution?

Post-Trip Classroom Activities:

Food Webs

The reinforces concepts about interdependency of animals in habitats

Time: 10 minutes
Ages: Year 1 and up (ages 5 and up)
Subjects: Science
Materials Required: Yarn, pictures of different rainforest plants and animals (optional)

Have the pupils form a circle. Get them all to name plants and animals that live in Africa. Hand out pictures of different plants and animals, or have the pupils remember their answers. Give the ball of yarn to one of the plants e.g. a vine. Then ask if any of the animals would use a vine (climb on it, eat it, live in it, etc.). Find an animal, e.g. a marmoset, and hand the ball of yarn to the marmoset (the vine should keep holding the end). Now ask what would connect to the marmoset, possibly a predator, e.g. an eagle. Hand the ball of yarn to am eagle.

Continue connection the pupils with the yarn representing the relationship between the plants and animals. Consider other connections as well, e.g. this bird lays eggs what would eat the eggs? This animal poops, what might use the poop? etc. Continue until all the pupils are connected together by the yarn. It should now look like a messy, interconnected web.

Investigate what happens to food webs if one element is removed. For example, ask what would happen if the rainforest is chopped down, the vines would all disappear (and most of the other plants as well). Have the pupil who is the vine let go of the yarn. Now, any other pupil who's yarn is loose (they were connected to the vine) should also let go. Use this to reinforce discussions of threats rainforest animals face, and how important all the parts are for a healthy ecosystem.

Post-Trip Classroom Activities:

Ecosystem Tag

This is a running game the reinforces concepts about predators/prey and different levels in ecosystems.

Time: 20-30 minutes
Ages: Year 4 and up (age 8 and up)
Subjects: Physical Education, Science
Materials Required: Arm bands (fabric strips to identify consumers and decomposers); energy chips (bits of card, pom-poms, etc.); pictures of different ecosystem levels

Before beginning this activity, review what an ecosystem is. Remind pupils of the different levels in food webs including producers (plants), consumers (most animals, e.g. sloths, parrots, monkeys etc.) and decomposers (insects, worms, bacteria, snails, etc.).

Divide the pupils into three groups: decomposers, consumers (twice the number of decomposers) and producers (twice the number of consumers) (e.g. 2 decomposers, 4 consumers, 8 producers). Set a boundary for the playing area representing the size of the ecosystem. The energy chips represent energy from the sun, there should be more of these than producers. Place these objects in a box/bucket/etc. in the centre of the playing area.

Each producer takes one energy chip from the box. They can only have one chip at a time, but if they lose it, they can get a new one from the box, because producers can make their own energy from the sun. Consumers get energy from eating producers. The consumers in this game tag the producers and are given their energy chip. Consumers can hold as many energy chips as they can get. The decomposers pant to take the energy from the consumers and put it back into the ecosystem. Decomposers take the consumers and take away ALL their energy chips. When decomposers have the energy chips they put them back in the box/bucket for the producers (plants) to use again.

When the game has been played for a while, ask the pupils how long the game could continue. The answer is forever! But what would happen if there weren't decomposers? Play again to find out what happens without one of the groups. At the end discuss how each group in the food web is important and has a specific role to play.

Post-Trip Classroom Activities:

Where in the World

Pupils learn where different endangered animals live.

Time: 20-30 minutes
Ages: Year 4-9 (ages 8-14)
Subjects: Science, Geography
Materials Required: Endangered Animals map

Before this activity, learn about different endangered animals. Pupils should also be familiar with the names of the continents.

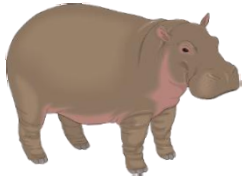
Hand out copies of the map to each pupil. The pupils job is to draw a line connecting the animals to where they live. Next to the image of each animal is a general description of where the animal lives. If they know their names, or have already researched the animals, have the students label the names of the animals.

For older pupils, have them research the animals more specifically and find out exactly which area they live in (research the country they live in).

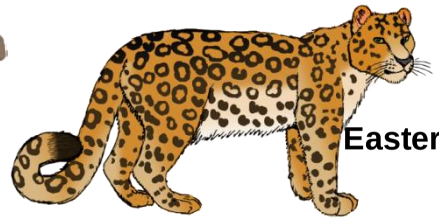
To make it more of an art activity, print two copies of the map for each pupil. Have them cut out the animals shapes and glue them onto the places where they live.

For older pupils, have them research the historic range of the animals and draw it on the map. Then have pupils research the current range of the animals and draw it over top, or on a second map. After drawing the historic and current range pupils can compare how much space these endangered animals have left.

Endangered Animals

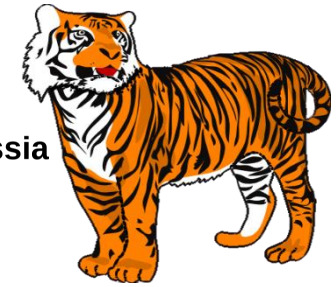


Africa

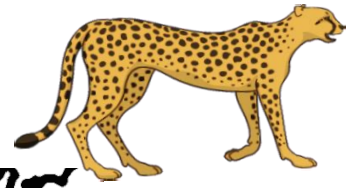


Eastern Russia

Eastern Russia



Asian Islands

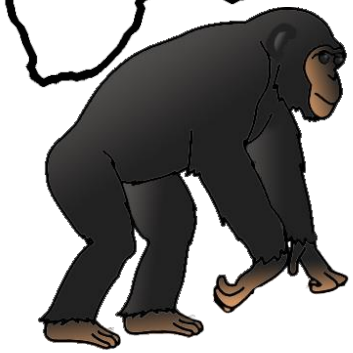


Africa

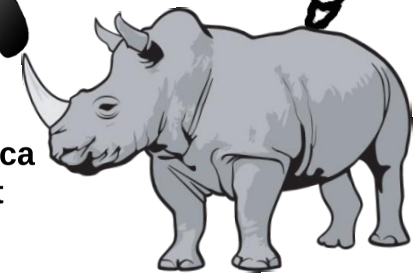
South America

Central Africa

Africa

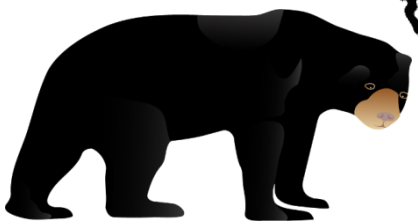


South America west coast



Southern Africa

Asia



Post-Trip Classroom Activities:

Conservation Debate—Orangutan

Pupils to role play different opinions about conservation.

Time: 20-30 minutes
Ages: Year 4 and up (age 8 and up)
Subjects: Science, Drama, Citizenship
Materials Required: Copies of opinions and questions for each group (or write on board)

Many rainforest animals are endangered and may go extinct. One of the main reasons they are endangered is due to deforestation (loss of habitat when the forest is cut down). Orangutans only live on the islands of Borneo and Sumatra. The rainforests on these islands are being cut down. When the rainforest is all gone, the orangutans will be extinct in the wild.

Divide your pupils into groups and assign one opinion to each group. Have them pretend to have that opinion and answer the questions (with the opinion of that person, not their own opinion). Next, mix the groups up, so one pupil with each of the opinion is in all of the new groups (one farmer, one ranger, one tourist). Have them debate their opinions in this new group and try and answer the questions again.

After the smaller groups have discussed their opinions, have each group share their answers with the entire class. What was each groups opinion? Did any of the groups have the same solution for the problem?

As an extension activity have pupils try determine other groups who might have different opinions about orangutans (other than farmers, wildlife officer, and tourists). Repeat the activity with more opinions. Does that make it easier or harder to reach a solution?

Post-Trip Classroom Activities:

Conservation Debate—Orangutan Opinions and Questions

Borneo Farmer: My family is poor. I barely have enough food for my family. Sometimes I can sell extra eggs from my chickens, or get work in town. Even with that, I only earn £100-150 pounds a year. My farm is very tiny. If I cut down the nearby trees, I can make my farm a lot larger. If my farm is bigger, I can plant more crops and make more money. If my farm is bigger, I can maybe make £200 pounds a year farming, and I can sell the wood for extra money as well! Just think of what I could buy, food, clothing, medicine, maybe even toys for the children!

Orangutan Wildlife Officer: We need to protect the rainforest. We are working hard to educate people about the importance of rainforest habitat. We patrol and prevent capture of orangutans for pets. We find and save injured and sick orangutans. Many volunteers are working to help protect this animal. However, every year more and more rainforest is cut down. Soon, there will not be a home for the orangutan in the wild. If they don't have a home, nothing we can do will protect them.

UK Tourist: I've always dreamed of taking a trip to see orangutans in the wild. I'm going to volunteer at an orangutan orphanage when I'm there, and help the animals. I am saving up money for the trip because it is expensive to fly there, and I want money to donate to the animals when I'm there. But I need to go soon, before there aren't any orangutans left. If there were no more orangutans, I don't think I'd bother going.

Questions to think about:

Do you think endangered species are more important then buying toys?
Who should get money spent by tourists?
How should the farmer make money?
How would you solve the problem of cutting down the rainforest?
Who would benefit from this proposal? Is it fair?

Post-Trip Classroom Activities:

Conservation Debate—Elephants

Pupils to role play different opinions about conservation.

Time: 20-30 minutes
Ages: Year 4 and up (age 8 and up)
Subjects: Science, Drama, Citizenship
Materials Required: Copies of opinions and questions for each group (or write on board)

Many African animals are endangered, and may go extinct. One reason they're endangered is poaching (illegal hunting). Elephants are poached for their ivory tusks, which is carved into jewellery, and ornaments.

Divide your pupils into groups and assign one opinion to each group. Have them pretend to have that opinion and answer the questions (with the opinion of that person, not their own opinion). Next, mix the groups up, so one pupil with each of the opinion is in all of the new groups (one farmer, one ranger, one tourist). Have them debate their opinions in this new group and try and answer the questions again.

After the smaller groups have discussed their opinions, have each group share their answers with the entire class. What was each groups opinion? Did any of the groups have the same solution for the problem?

As an extension activity have pupils try determine other groups who might have different opinions about elephants (other than farmers, rangers, and tourists). Repeat the activity with more opinions. Does that make it easier or harder to reach a solution?

Post-Trip Classroom Activities:

Conservation Debate—Elephant Opinions and Questions

African Farmer: My family is poor. I barely have enough food for my family. Sometimes I can sell extra eggs from my chickens, or get work in town. Even with that, I only earn £150-200 pounds a year. We need money for seeds for the farm. When my children are sick I need extra money for medicine. Recently, a man told me he would pay me £500 pounds for a pair of elephant tusks! That's more money than I make in a year farming! Just think of what I could buy, food, clothing, medicine, maybe even toys for the children!

African Wildlife Ranger: We must stop illegal hunting at all costs. One elephant killed for ivory is too many! I've asked the government for stronger laws to protect the elephants and other game animals. There is so much money involved people are willing to do awful things. The poachers killing the elephants make a few hundred pounds, but the ivory dealers selling it will make thousands. The elephant is an important symbol of Africa. They are unique, beautiful and essential to the ecosystem. We must protect them at all costs.

UK Tourist: I've always dreamed of taking a trip to Africa to see the amazing wildlife. I'm saving money to go, because I know a good trip with an excellent guide will cost a lot. I'm happy to spend a lot of money because seeing these amazing animals in the wild is worth it. But I need to go soon before the animals become extinct. I'm most excited about seeing the Elephants. If there were no more elephants, I don't think I'd bother taking a trip to Africa.

Questions to think about:

Do you think endangered species are more important then buying toys?

Who should get money spent by tourists?

How should the farmer make money?

How would you solve the problem of elephant poaching?

Who would benefit from this proposal? Is it fair?

We hope you enjoyed your trip to

COLCHESTER ZOO
Action for the Wild

Learning about

Endangered Animals